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BUILDING
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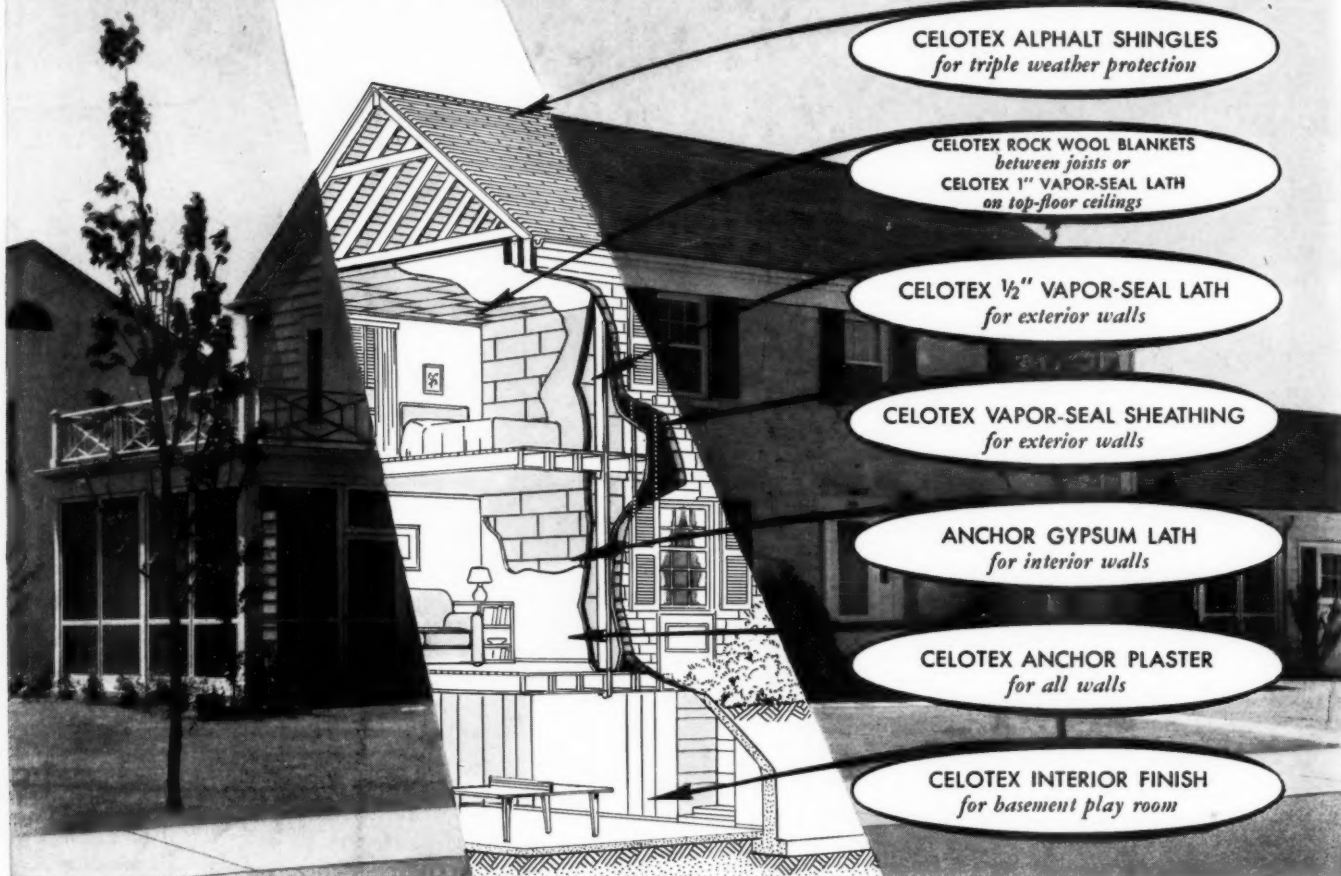
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AMERICAN BUILDER

and Building Age

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PUBLISHER'S PAGE

Both Unity and Disunity: A Paradox

WE ARE confronted with the paradox of both unity and disunity—unity for defense; disunity regarding (1) what we should defend and (2) from whom we should defend it.

Some say we must defend democracy; others that we must defend the "American way of life." From whom should we defend them? All agree we should defend ourselves from foreign foes. But many believe the American way of life, and even democracy, are being attacked by domestic foes. If so, who are they, and how should we defend ourselves from them?

What is meant by "democracy"? Usually, the system by which important issues are submitted to the voters and determined by their votes. But a plurality, or even a majority, might vote to abolish the Federal Constitution and establish a dictatorship. This is almost exactly the "democratic process" which made Hitler dictator of Germany. Some New Dealers talk as if anything done by the "democratic process" must be accepted as right and sound. But, plainly, few of our people believe we should defend democracy to enable it to go to any extreme it may see fit, including, as in Germany, the extreme of committing suicide.

What most of us *who think* believe we should defend is the "American way of life." That always has included representative democracy in government; but also freedom—freedom of speech; freedom of the press; freedom of religion; *economic freedom* to work when and where one pleases, and to acquire, own and manage property.

THIS *economic freedom* is the necessary foundation of all the other freedoms. The history of the world proves it, and most strikingly the history of Russia, in which all the other freedoms had to be extirpated to make communism work. And all history proves that economic freedom is essential to enough increase of wealth and income to enable all the people to escape want, and most of them to have the standard of living prevailing in the United States. And if a people is

to maintain such a standard of living, and in addition carry out a huge program of defense, it must be afforded opportunity to produce the utmost that it can for *civilian* as well as for *defense* purposes. For not only must its *civilian* population produce all that is produced for *both civilian and defense* purposes, but its entire *civilian* population must live solely on what is produced for *civilian* purposes. Only its *armed forces* can live on and use what is produced for *defense*.

IT follows that a huge defense program presents not only great military problems, but also *economic* problems of the very greatest magnitude and delicacy. Disregard these economic problems, or attack them in wrong ways, and you undermine or destroy the economic system required to support the huge defense load and *the much huger* civilian load.

We are in grave danger of seeing our free economic system thus undermined or destroyed. "The needs of national defense must be given first consideration," said Philip W. Kniskern, president of the National Association of Real Estate Boards in a recent address, "but an essential of defense is the maintenance of a sound national economy. If we must sacrifice home building that is not needed for defense, our whole national strength calls for a very accurate check of what our supply of essential materials actually is and of where our home building effort must be concentrated." In this country of vast productive resources too many "shortages" that are unnecessary or plain fakes have been developing because of the economic ignorance, or recklessness, or worse, of some of those handling the defense program.

If our defense program prevents us from preserving a free, healthy, strong American economic system it will have prevented accomplishment of what should be its main purpose.

Samuel O. Dunn,

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AMERICAN BUILDER

AND BUILDING AGE

"Priority Assistance" for Home Builders

IN its October issue, *American Builder* outlined in detail the Administration's plan for speeding defense housing by means of a system of priorities, from the Office of Production Management, on building supplies involving "critical list" materials. This defense housing priorities plan, set up to assure the construction of 300,000 home units in defense areas during the next six months, was announced at Washington by Priorities Director Donald M. Nelson on September 19. Following this, the Supply Priorities and Allocations Board, on October 9, issued a statement of policy (SPAB-9) further outlining its attitude toward building projects, both public and private, especially those which would classify as not essential to the nation's defense.

This statement has been reported by the daily press under sensational front page headlines. These newspaper stories have greatly disturbed the building industry and have confused the general public as well. Readers of this publication, *especially those concerned with home building*, are advised that such sensationalism was not warranted. Careful analysis of this new policy and its application does not justify alarm.

The new policy merely expands Order PM-1192, as explained in the October *American Builder*, under which the Office of Production Management for the first time classified home building in the defense category. No licensing of building of any character is indicated and all controls continue to be exercised through allocation or refusal of priority ratings.

Hereafter, SPAB will apply two tests to every project asking priority assistance: (1) Does this construction involve the use of appreciable quantities of such critical materials as steel, copper, brass, aluminum and zinc? (2) Is the construction directly necessary for national defense or clearly essential for the health and safety of the civilian population?

"If the answer to the first question is 'yes' and the answer to the second question is 'no,' priorities for the critical materials involved will not be issued," the latest announcement states.

"NOT A STOP ORDER"—NELSON

Prominent newspapers of Oct. 21 carried an Associated Press dispatch from Washington quoting Donald M. Nelson, director of the Supply Priorities and Allocations Board, as follows, "The Board's recent order restricting private building construction was not a blanket stop order and structures which do not involve the use of such critical materials as steel, copper, and brass can be erected as freely as a year ago. Such basic building materials as lumber, brick, stone, mortar, concrete and the various clay products are not particularly scarce, are not under priority control, and hence may be obtained freely for any building job whatever."

Is this policy aimed particularly at home building?
The answer is "no." Unofficially and somewhat guardedly, some defense sources indicate that it was aimed in large part at what they called "pork barrel" public works projects which have negligible defense significance or little public health and safety importance.

Our quick analysis of this statement of policy is:

(1) The defense housing program will not only be continued, but probably expanded.

(2) Non-essential building, including higher priced home building, will be possible only when required materials are available. This in no way differs from the previous situation; and the amount of non-essential construction taking place will be entirely controlled by the availability of local stocks of materials.

(3) The control of the program remains in the hands of Donald M. Nelson, and to his judgment is left the determination of what buildings or projects are essential, and therefore, entitled to priorities.

(4) Definition of "appreciable amounts" is left in the hands of Nelson and his staff.

(5) The door is left wide open for modernization through emphasis on "health and safety of the civilian population."

The new policy emphasizes needed home building, remodeling and farm construction. Despite the shock to heavy construction interests we see nothing in this statement to change the outlook held by the building industry prior to issuance of the order.

The present extensive movement toward the subcontracting of defense orders to small manufacturers all over the country will bring about such a nation-wide distribution of defense industry that it seems certain that OPM must either greatly increase the list of designated defense areas, or the attempt to define them must be dropped altogether.

We are still of the opinion that after several months of utmost confusion it will be found that many of the present shortages in critical materials have been brought about by previously uncontrolled inventory

buying, both by government agencies and private industry. Subsequent control of such buying will prove, we believe, that there are available reasonably adequate supplies of steel and other critical materials to take care of a sane program of housing, remodeling and farm building.

The building industry may well be thankful that since priority forms and control had to be introduced, they came in the fall of the year. The resulting confusion will occur during the slowest building months and when the industry still has adequate inventories to take care of better-than-normal operations for some time to come. During the months immediately ahead more careful analysis of overall production and defense needs is expected to show considerable metallic supplies available for home building.

Heavy, non-defense construction is practically halted by the new priority rulings, but the men who do residential building, remodeling and farm work have a good year ahead. The authorities for this prediction include OPM, SPAB and the Defense Housing Coordinator. Daily newspapers have written plenty of scareheads about restrictions on building and have ignored completely official forecasts about how big the 1942 building market will be. Here is a summary of official findings and forecast for 1942:

(1) The Research and Statistical Bureau of OPM says, "New building in 1942 will decline to about \$8,500,000,000 from the peak of \$11,200,000,000 expected in 1941." That is more business than the building industry had in 1940, which was a good building year with a \$6,850,000,000 total.

(2) OPM estimates that defense construction (which includes privately built houses) will account for more than 75 per cent of the 1942 total, and will employ 30 per cent more men than it did in 1941.

(3) "Farm construction probably will not decline but may actually rise as it did in 1918," the survey indicates.

(4) SPAB forecasts that, "the amount of maintenance, remodeling and repair work during the year (1942) is expected to be roughly equal to the volume in 1941."

"Volume of residential construction in the United States is at present being affected more by the fear of shortages than by the actual inability of builders and contractors to obtain materials"—so begins an article in the current issue of "Domestic Commerce Weekly," official publication of the Department of Commerce, describing a nation-wide survey on construction recently conducted by the Bureau of Foreign and Domestic Commerce.

**LETTER FROM DIRECTOR NELSON TO SENATOR ALEXANDER WILEY (R., WIS.) STATES GOVERNMENT
POLICY ON CONSTRUCTION (Quoted from "Congressional Record")**

Mr. WILEY. Mr. President, some days ago I had the pleasure of talking to Donald M. Nelson, executive director of the Supply Priorities and Allocations Board. The purpose of my visit to him was confirmed by a letter I wrote to him in which I asked for certain information relative to the rights of small builders and contractors. Today I received a letter from him and I ask that it be printed in the "Record," because it contains information of particular interest to thousands of small builders throughout the nation.

There being no objection, the letter was ordered to be printed in the "Record," as follows:

SUPPLY PRIORITIES AND ALLOCATIONS BOARD.

Washington, D. C., October 18, 1941.

Hon. Alexander Wiley,

United States Senate,
Washington, D. C.

My dear Senator Wiley: This letter is in response to your telephone request for further information about the policy on building construction laid down last week by the Supply Priorities and Allocations Board.

I believe the nature of this policy has been somewhat misunderstood. In substance, it is a policy for the OPM Division of Priorities to follow hereafter in granting priorities assistance on construction projects. As existing shortages in the critical metals become more and more acute, it becomes more and more difficult for a builder to obtain structural steel, plumbing and heating equipment, electric wiring and equipment, and so on, without a priority rating. Within a few months it may be practically impossible for the builder to get such items without priority assistance. Consequently the policy means that henceforward, if a builder is unable to get these metal items without a priority rating, he will not be able to get them at all unless he can satisfy the Division of Priorities that the job he is working on is essential to the nation, either directly for national defense or indirectly as a safeguard to civilian health and safety.

Thus, while the policy will put sharp limits on new construction which may hereafter be initiated, it is far from being a blanket

stop-building order. Such basic building materials as lumber, brick, stone, mortar, concrete and the various clay products are not particularly scarce, are not under priority control, and hence may be obtained freely for any building job whatever. The man who plans a construction job which uses only those materials and does not involve the use of steel, copper and brass components is as free to go ahead now as he was a year ago.

As time passes, of course, the increasing scarcity of copper and steel will almost certainly make it impossible to get them without a priority rating. It is this scarcity which has made this policy unavoidable. Currently, the purely military demand for copper in this month of October actually exceeds the total month's production of copper in the United States plus the total quantity of copper which the nation will be able to import during the month. The situation in regard to steel is somewhat less acute, although a sizable shortage appears to be in prospect for 1942. It seems to be obvious that under such circumstances the country can do no less than make it a policy to use none of these materials on any job which can be postponed until the end of the emergency.

I think it is important for everyone to understand the following point as well: That although we have undertaken to grant help where possible, in order that needed buildings now under construction and substantially along the road to completion may be finished, that policy will not apply to buildings begun hereafter. Certainly, if a builder undertakes now to start a new building without priority assistance and finds when it is half finished that he cannot complete it without getting a priority rating, he will not be able to get that rating merely on the plea that he must have help to wind up his job.

Materials will continue to be made available for defense housing, for all defense industrial construction, and for other jobs which are vitally necessary to the country's civilian health and safety. We cannot do less than that; I believe you will agree that, considering the urgency of the situation today, we cannot well do more.

Sincerely yours,

DONALD M. NELSON.

"While there are isolated instances of work already under way being completely stopped for lack of certain materials, such stoppages constitute a very small fraction of the total construction activity, according to the findings of building material dealers, contractors, mortgage lending institutions and other informed sources. More important are the costly delays resulting from failure to obtain materials and equipment as needed, a substantial part of total residential construction being thus affected. With some important exceptions there is an ample supply of primary non-metallic construction materials such as cement, stone, lumber, brick and glass. Among the more general and acute shortages are the standard sizes of common nails, various items of structural and reinforcing steel, galvanized pipe, galvanized sheet metal, copper and brass pipe and other copper and brass products. In most cases these items are not strictly unobtainable, but require a certain amount of shopping around with attendant delays."

Figures provided by the Bureau of the Census show that on September 1, inventories of plumbing and heating supply wholesalers were 38 per cent higher than a year earlier; electrical goods wholesalers' inventories were up 42 per cent, and hardware up 17 per cent.

When priority ratings for housing were established in September, OPM and defense housing officials assured the building industry and the general public that their plans would assist rather than deter home building. Since that time these assurances have been repeated in speeches before trade conferences, in print and on the air. Those in charge of the priorities program say that they are attacking the problem at both ends by providing priority forms for contractor-builders, and by preparing to release sufficient raw materials to manufacturers for construction of 200,000 privately built new homes during the next six months, to be followed by another release that would permit building an additional 200,000 units. This will make 400,000 defense industry homes to be built by private enterprise in 1942, assisted by priorities; at the same time 100,000 home units will be erected by direct government action through its several agencies.

AT DES MOINES, prominent building firms joined to present this reassuring announcement (10 x 22 inches) to the general public—a very timely and proper move in the public interest. Be patriotic and continue to build!

DES MOINES TRIBUNE - WEDNESDAY, OCTOBER 15, 1941.

PAGE THIRTEEN

THERE IS NO SHORTAGE* OF BUILDING MATERIALS

For the Fall Building Season.

*According to a recent city-wide survey among supply dealers, there are sufficient supplies of quality lumber, roofing, and building materials to meet all present civilian building needs.

[NOTE: Because Des Moines is Designated as a Defense Area, Priorities Will Be Granted on Critical Materials.]

Yes, more than ever, this fall is a favorable time to build, repair and remodel your home. You and your family deserve a home of your own. You can start your plans now and move in before Christmas! Just think of starting the New Year in your own home! And with the F.H.A. Plan available, the cost is at the level of monthly rents.

Or perhaps you need a garage, an attic, some remodeling or repairing. You can go ahead NOW with your repairs or improvements — and spread out the payments so they'll fit into your monthly budget—through the F.H.A. convenient Modernization Plan.



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Builders Rush Small Defense Homes with Aid of Priorities

Get quick action in many localities. Long Island builders planning increased programs in houses under \$6,000

THE floods of applications for priority ratings that have descended upon OPM indicate that private builders are accepting the challenge of defense officials to produce more small homes than they have ever done before.

In the New York area alone, applications on more than 3,000 homes were received within a few days after the OPM announcement was made. Private builders throughout the country have been sitting up nights to fill out the required forms that should enable them to obtain needed materials for building homes, along the lines of procedure described in the October *American Builder*.

Among the most active sections have been Long Island and New Jersey. Most of the principal home building centers there have been classified as within commuting range of defense areas and are hence eligible for priority assistance. A high percentage of the builders from this territory were already engaged in projects under \$6,000. Those that are not are busy reorganizing their setup to make their jobs eligible for priority assistance.

One of the first to obtain priority assistance in the Long Island area was a veteran builder, William R. Gibson, who has been in the business for more than 41 years. He went through the previous war and through the attendant price rises and shortages. Conditions in the last war were "lots worse," he says, and he is optimistic about the ability

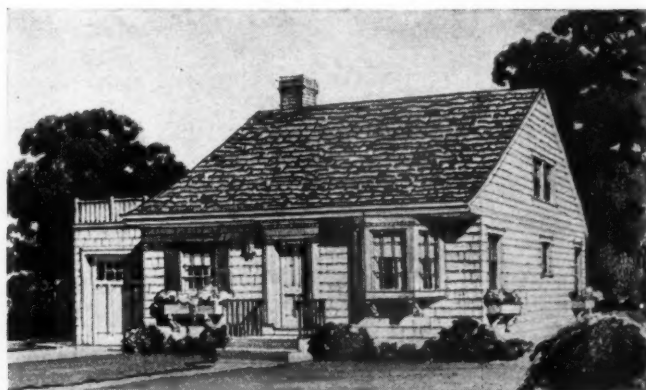
of experienced, well financed and intelligent firms to continue to build and sell houses.

"Builders always have problems," he told *American Builder*. "The smart ones solve them. The weak sisters and some of the chiselers may pass out, but responsible firms with experience and with the ability to pay cash for materials will survive."

"We can still build good houses for people—houses of the kind they want and will buy. Smart builders and smart manufacturers are constantly improving their products and giving the buyer more house for his money."

Gibson has had very good success during the past year with a 26' 4" x 36' cellarless house which he has described as the Nantucket home. This house meets the requirements for defense housing and he is now planning to build a similar improved model under the defense program.

The moment information concerning the new priority plan was available Gibson got busy with plans, specifications and material lists. Treasurer of the Gibson Corporation is Franklin B. Lord, senior partner of the well known New York law firm of Lord, Day & Lord. He was able to handle the complicated details of making out the necessary forms and checking them with the proper FHA officials in record time. The information required concerning the proposed houses for which priority assistance was required was very complete. The information at-



DRAWINGS of two of most recent models of Gibson's Nantucket defense homes. Earlier model is fully detailed on page 49.



DEFENSE TYPE homes under construction by W. R. Gibson.

BUILDER GIBSON gets first priority order in nationally important Nassau County, Long Island, on Oct. 17. It is an A-7 rating, the actual number—77-018-000001.

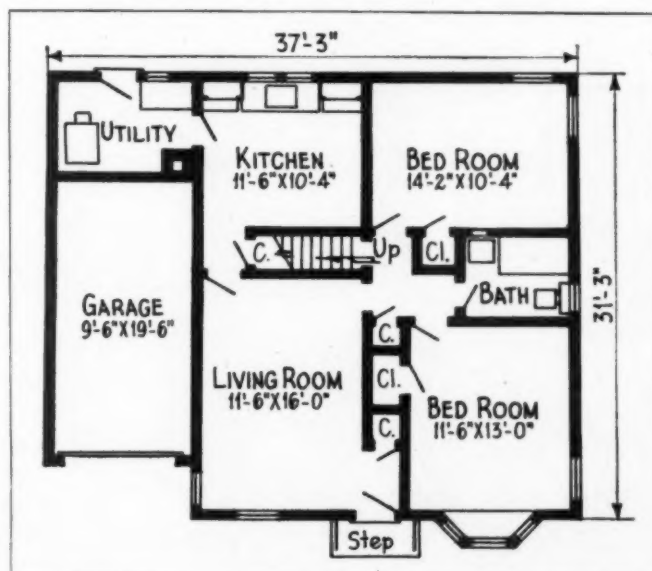


BLOCK of eight Gibson homes nearing completion. Priorities will aid additional groups.

tached to the PD-105 Application Forms included photostatic copies of all material lists, and even included a detailed list of every item of pipe and plumbing right down to the last elbow and T.

At the time of applying for priority assistance, the Gibson Corporation had 23 houses under construction in various stages, including a number of foundations. They are planning to build 50 more as fast as materials can be secured, using the improved models, with second-floor stairs, illustrated at the right. The architect on these houses is Ralph M. Karger, of 193 Puritan Ave., Forest Hills, N.Y.

While W. R. Gibson did not discount or minimize the difficulties that private builders face in a time such as this, he took the attitude that this is just another "tough job" to be tackled, just as smart and successful builders have been handling them through the years. He said that conditions today are not nearly as bad as during and after the last war, when brick went up to \$25 a thousand, cement was \$5.50 a barrel, and all prices skyrocketed unbelievably. He told of standing in line to get needed materials, and of paying cash in advance and hauling them away in his own trucks. He saw the price of an identical small Gibson house rise from \$3,800 to \$8,500 in the



LATEST revised floor plan of Gibson cellarless home. Attached garage, stairs to second floor have been added to original.



PHENOMENAL SUCCESS was achieved with this first model Nantucket home at Gibson, L. I., of which more than 50 were sold. Detailed drawings are on next page. Latest models, as shown on preceding pages, have improvements, including attached garage.

course of a few years' time. During this time the firm went right on building and selling houses despite the rising prices and the attendant problems.

Gibson believes that materials will be available for low-cost home building and that he will be able to build and sell houses despite the inevitable higher cost. He believes that restrictions on other types of building will make labor more plentiful for home building.

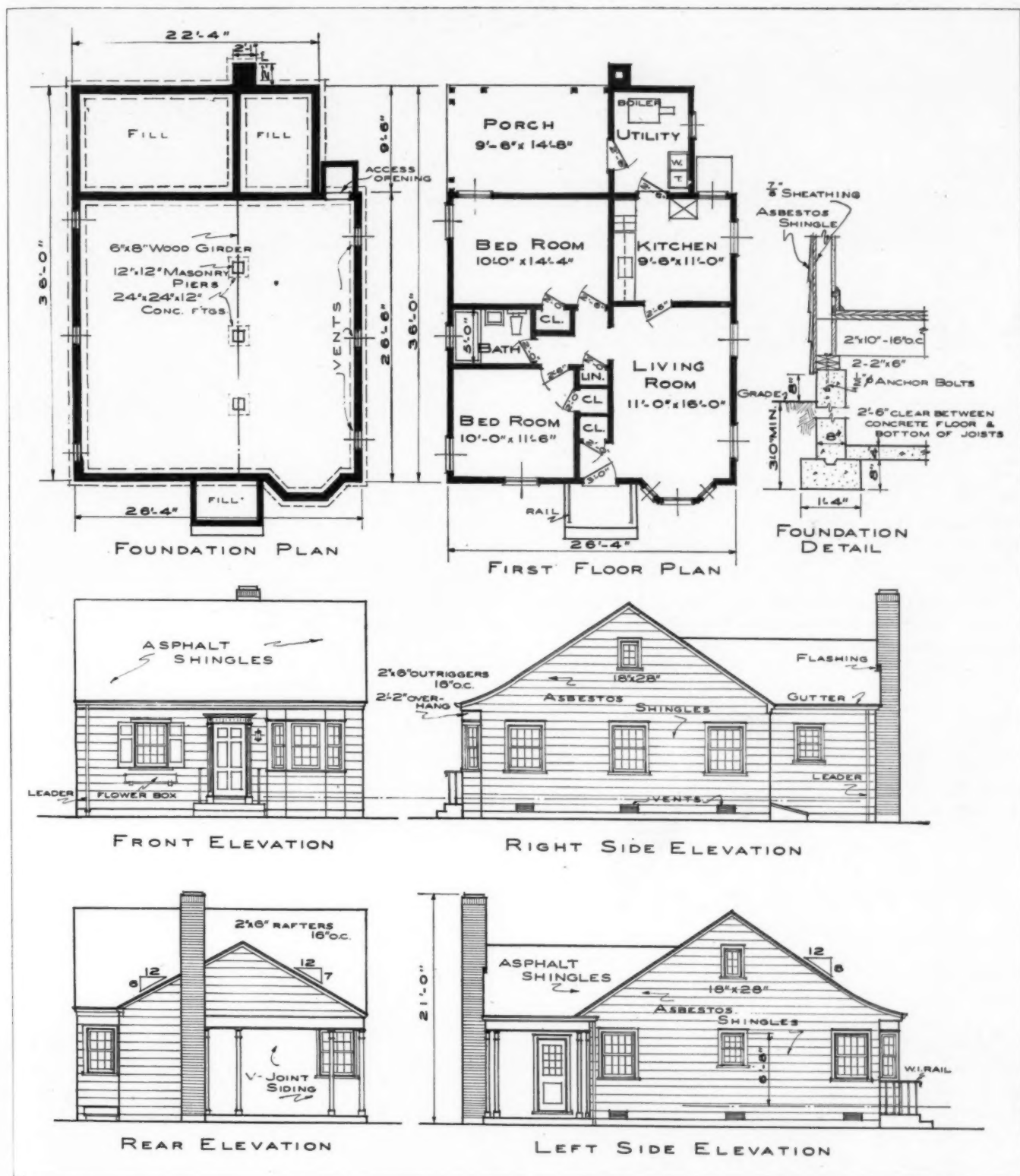
In Gibson's 41 years of building experience on Long Island he estimates he has erected homes in which some 8,700 families are living today. In producing the Nantucket model he pioneered a new field—the cellarless house. Ground conditions were such in the tract of land where these houses were to be built that a cellarless house

was indicated. Due to water pressure the usual type of basements would have been expensive to build and properly waterproof. Yet there was considerable doubt that home owners would accept a cellarless house, even though this type of home has been widely built in various parts of the country and was given extensive publicity at the New York World's Fair.

Gibson made a study of this subject, however, and finally evolved the construction detailed on page 49. The ground is covered with a 3 to 4-inch layer of concrete to seal out moisture. A 2½-foot space is left between the concrete floor and the bottom of floor joists. Heating pipes from the Crane hot water system located in a utility room pass through this space and satisfactorily warm it



NO EXCAVATING, waterproofing or basement stairs building required. Picture shows completed foundation of Gibson's cellarless home with layer of concrete laid on earth. Dry, heated 30-in. space in left between slab and the bottom of floor joists.



DETAILED DRAWING of first Nantucket cellarless house built by Gibson. In later models stairs to second floor are provided. Note details of cellarless construction. Ralph M. Karger, architect.

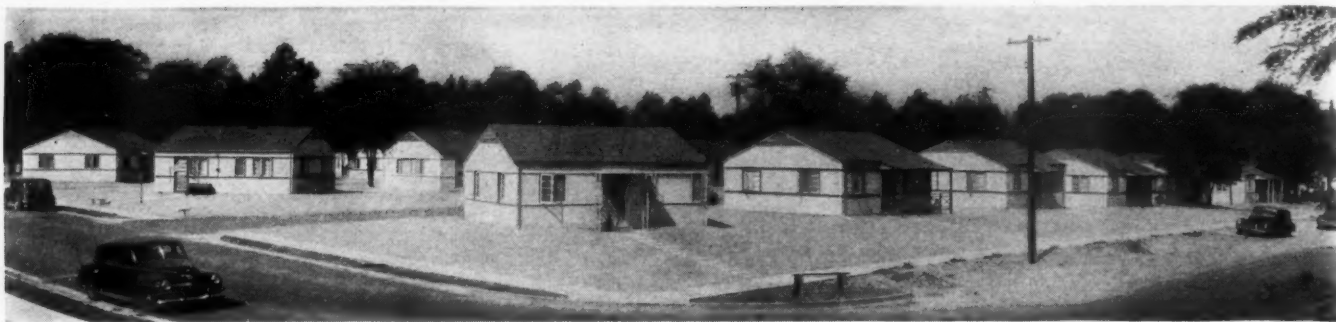
without wasting heat. The 2½-foot space between the floor joists and the concrete slab is reached by an access door, and can be used for a considerable storage of goods.

After consultation and collaboration with Stanley White, manager of the Long Island office of the Federal Housing Administration; and with officers of the Dime Savings Bank of Brooklyn which was providing the financing, Gibson decided to test public reaction to a cellarless home by building four models. That the public would accept such a house was clearly shown by the fact

that three of the four models were sold before completion. Since that time 54 of the Nantucket cellarless homes have been built, and as a result the new and larger projects are going ahead.

The hot water heating system, installed in the utility room, is slightly below the level of the first floor. Located off the kitchen, this room also contains the laundry tubs and serves as a convenient, enclosed back entrance.

The original Nantucket model received the 1940 archi-
(Continued to page 109)



Pierce Foundation Houses for Martin Workmen

New methods and materials cut costs

SIX HUNDRED low cost houses of an entirely new type which some day may make home ownership a reality for America's 13 million families with yearly incomes of \$1,500 or less are now being built in Baltimore for airplane workers at The Glenn L. Martin Co. Cost of each house is about \$2500.

The houses are built in four and one-half room units, complete with tile-trimmed bath, plumbing, oil heat, and electric refrigerator, water heater, stove and oven. Housing authorities who have seen the dwellings declare that they are one of the best answers to low cost housing.

The houses provide the basic living comforts, conveniences and durability of high-priced dwellings, are extremely economical to heat, and will cost remarkably little for upkeep, since they require no painting or decoration inside or out, except for doors, windows and a small amount of trim.

The low cost is achieved by a new method of construction which utilizes a single thickness wall material in place of the customary eight or ten separately applied layers, such as sheathing, building paper, insulation, lath, multiple coats of plaster, wall paper, and paint employed in traditional wall construction.

The material which comprises the complete wall of the house, including exterior and inside finish and ample insulation against heat and cold, is Cemesto Board, a product which has been developed for just this purpose over a ten year period of research and practical experimentation by The Celotex Corporation. The product consists of a cane fibre insulation board core, sealed with a bitustatic compound between two layers of a weather-, fire- and wear-resistant combination of asbestos and cement. The finished material is light in weight, easy to handle and work, and meets the basic requirements for a unit thickness wall material.

The particular structural design used at The Glenn L. Martin Company was perfected by the John B. Pierce Foundation of New York, a non-profit organization which has devoted 16 years to the study and development of low cost housing. Robert L. Davison, the director of housing research, applied a well known principle of curtain wall construction, heretofore most commonly used in factory buildings, to the small home. Davison, in developing The Glenn L. Martin Company plan, was assisted by Jan Porel, architect and engineer of the Martin company, the technical staff of The Celotex Corporation and by Skidmore, Owings and Merrill, consulting architects, of New York and Chicago.

In the Cemesto Board House a skeleton wood frame, cut to exact shape, notched and grooved at the mill, is assembled at the job. Large sheets of 1½" thick Cemesto, 4 ft. x 12 ft., are quickly attached to the lower course of this skeleton with shorter pieces, cut to leave space for



THIS is a Celotex Cemesto House of the type which is being built to house the families of 600 defense workers at The Glenn L. Martin Company near Baltimore.

windows of any desired width, secured in the second course. Window frames with prefitted windows are fastened immediately into the opening. A third Cemesto panel and a wood girder above the windows complete the sidewall unit.

The sturdiness and weather protection provided by this wall construction are illustrated by the standard rain test, using the same type of machine with which the Bureau of Standards makes this test. This machine will usually force moisture through an ordinary brick wall in from eight to ten minutes. After five days of the test, the Cemesto Board wall was penetrated to a depth of only $\frac{1}{8}$ "—to the asphalt line which cements the asbestos surface to the Celotex core, no moisture penetrating the core.

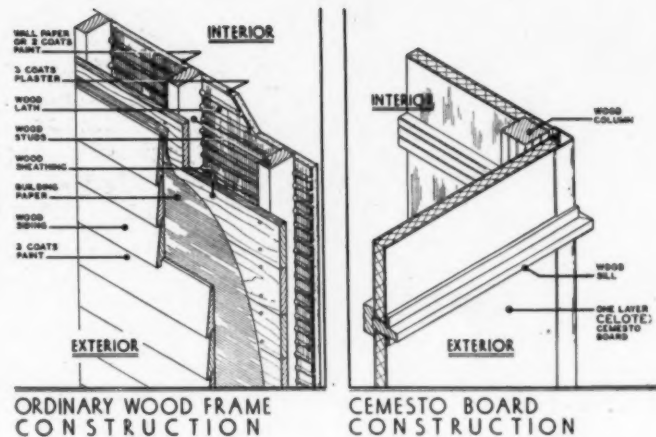
Light roof trusses, built in a portable, power-equipped shop on the job fit into metal clips on the top of the sidewall skeleton.

The roofs of the Martin houses are covered with Celotex or Coper-Cel, a newly developed single roofing structural unit which both insulates and affords complete protection from the elements. This product is a complete roofing unit, consisting of formed sheets of Celotex insulation, 7 feet long and 15 inches wide, encased in a 90 lb. asphalt roofing felt surfaced with mineral granules. These units require no under-sheathing and can be applied to roof areas much faster than ordinary shingles. An interlocking feature provides security against wind storms, and the insulating core affords protection against heat and cold. The heavy butts of the units give the roof deep shadow lines somewhat similar to thick slate or tile.

Interior partitions are of Cemesto Board, 1 inch in thickness. The attractive ceilings consist of Celotex Key Joint Units—an insulating material requiring no additional finish. The units are fastened directly to the under side of the roof trusses.

The entire construction has been so carefully worked out that there is no interference with existing crafts in the construction field. Only mill work is done before delivery to the building site. All assembly and other steps are done at the job site.

The present Cemesto House is suitable primarily for large housing projects where standardization is possible and where a good housing standard must be obtained with the maximum of speed and minimum in cost. "For the present," said Bror Dahlberg, president of Celotex, "the use of Cemesto construction will probably not be available for the singly built dwelling because of the demands on our production for defense housing, barracks, and factory construction. Looking ahead, Celotex engineers are lay-



ing plans to make the Cemesto House available to the small wage earner—the man who has never been offered a soundly built, attractive new home at a price within reach of his purse."

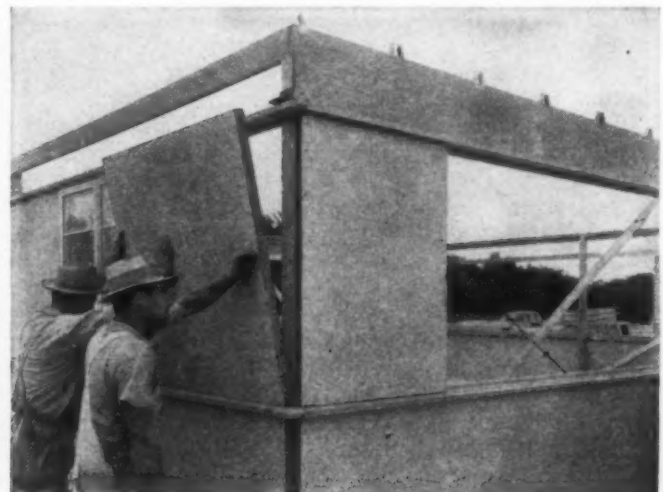
Outline Description of Cemesto House

1. The house is on a lot which averages 48' x 100'.
2. The house is 24' x 28'. It consists of a living room (13'4" x 16'), dining alcove, hobby room, bedroom (10' x 12', with closet), bedroom (9'6" x 10', with closet), kitchen (10'8" x 6'), linen closet, and bathroom.
3. Lumber and millwork are top grade. Millwork is all resin treated. The house is completely caulked for weatherproofing. Wooden gutters are used. The roof is erected with a bridge-like truss construction. The trusses are tightened in with hurricane clips. The roof is flashed with copper and lead flashings. The attic is ventilated. Plywood girders similar in construction to built-up steel girders are used. Phenol plastic bonded plywood is used in the girder construction. The floors are made from $\frac{1}{4}$ " thick flooring. A porcelain enamel flue and chimney conserves heat. The water lines are of copper. The electric meter is on the outside. The new type switch boxes do not require fuses. Windows and doors are completely weatherstripped. Casement windows are used. Copper screens are provided. The two "picture windows" are provided with Venetian blinds.
4. The following electrical equipment is included: electric refrigerator, electric hot water heater, electric stove and oven.
5. The kitchen is provided with built-in kitchen cabinets. The combination sink and laundry tub has a swing faucet and the counter has a linoleum work surface and is trimmed with metal. Linoleum is on the floor. The bathroom has a built-

(Continued to page 108)



A VIEW of living room and dining alcove. Living room has two "picture windows" like this.



CEMESTO board panel being applied to framing of a Pierce house, one of 600 being built for Glenn L. Martin Co. workers.

LEFT: Scene of Henry Doelger's operations—San Francisco's Sunset district—latest development in foreground. BELOW: Firm's office, sales division, drafting room and millwork plant.



A City of Homes by One Builder

"One-a-day" Doelger, large scale San Francisco builder, steps up his row house program to "two-a-day" through mass production methods and quantity buying

OUT of acres of sand dunes that were once considered waste land, Henry Doelger, San Francisco builder, has in 15 years carved out a building empire, known as Doelger City, that consists of several thousand small homes ranging in price from \$4500 to \$7500.

The houses, of attached and detached type, march down to the sea row upon row, and street after street. Each resembles its neighbor in compactness and planning, but each is different in architectural treatment and varies as to interior details. This particular section is designed to reach the upper white collar class.

Somewhat more pretentious and with greater breathing space between the houses is Golden Gate Heights, another nearby Doelger development. Houses here reach up to the \$15,000 bracket. Both developments, however, are in the Sunset district of metropolitan San Francisco.

Doelger, rated one of the most active builders in the Bay region, has a building record of more than 2800 houses since 1926. For many years his slogan, "one-a-day-Doelger" (one house built for every one sold), couldn't be topped. Today, Doelger has beaten his own record by stepping up production to "two-a-day." This is made possible, largely, through mass production methods and quantity buying, which together effect a 15 per cent saving in construction costs.

For the first six months of 1941 the record was 370 homes—70 completed and sold during May alone, at sales totalling \$390,000. The minimum home price as stated is \$4500, the maximum \$15,000, the average around \$5500.

This large scale builder maintains a separate establishment for millwork (see view at right) and employs his own construction crews (carpenters mostly) numbering



about 300. These include rough job crews, trimmers, etc.

Pre-cut lengths of lumber, studs, floor joists, sheathing (trimmed around windows on the job), and all specialty work, such as band saw details, mantels, exterior trim, octagon and circular sash, flower boxes, shutters, wood brackets, interior trim and cornices, are finished at the mill and hauled to the site in company owned trucks.

From the very beginning, Doelger has resorted to short-cut methods by using power equipment for millwork. As building operations increased he enlarged the mill department, installed additional equipment, increased the mill-work crew to six men, placed a superintendent in charge and began speeding up production of ready-cut pieces and hand finished details.

The mill is equipped with nine DeWalt saws (used mainly by job crews), 12 Skilsaws, a number of Delta Unisaws for the trim crews, a joiner, drillpress, sander, swingsaw, shaper, bandsaw and other power devices.

Extensive warehouse stock of doors (standardized to a major extent) is another operative feature. In fact, a basis of standardization has been attained throughout by the quantity purchase of building materials, supplies and equipment. Planning, too, has been standardized to a great extent. Five carloads of doors, for example, are

ordered at one time. Some of these are four and five panel, some single panel and still others are slab doors. About 70 doors a day are used.

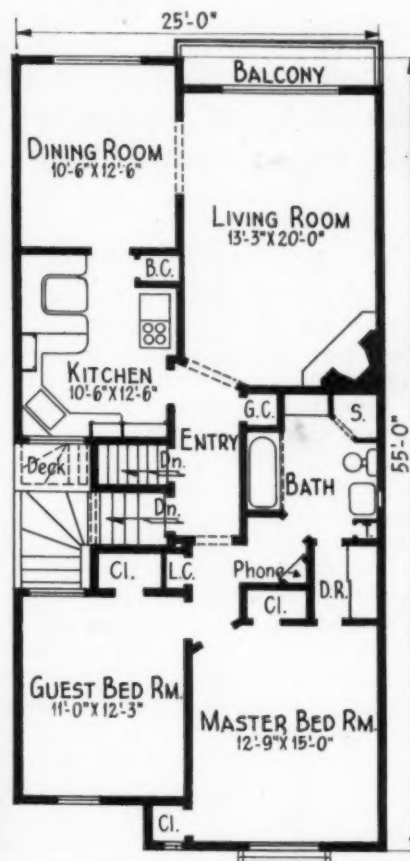
Not long ago in a full-page advertisement announcing the new two-a-day building schedule, these volume figures were given out: 8500 doors used in a year, 17,500,000 board feet of lumber, 100,000 sacks (portland) cement, 7700 window frames, 7700 cabinets and 700 furnaces—an impressive array of facts that apparently proves as impressive to the buying public if Doelger sales figures are any criterion.

In any large city where land per foot is at a premium, compact planning is essential. Particularly is this so in the Sunset district of San Francisco where Doelger-built homes are located. Practically all of the smaller homes are built on lots with a 25-foot frontage but with a livability and spaciousness undreamed of on such narrow frontage, due to careful planning. Such compactness, it is pointed out, offers urban dwellers the convenience of a modern apartment plus the comfort of one's own home; a separate entrance, a roomy back yard, and separate basement facilities that, besides accommodating water heater, furnace and other utilities, can be used also for

(Continued to page 106)



ABOVE: A typical Doelger model row house with rooms placed over "above ground" basement, used for garage and entrance (through arch at left.) Arrangement is typical, and planned for 25-foot lot, standard for this area.



THE living room has large French window leading out to rear balcony which, in this house, overlooks the water. Bedrooms are to the front; kitchen and bath are equipped with adequate skylighting. Design is standard and reversed with different detailing for variation.

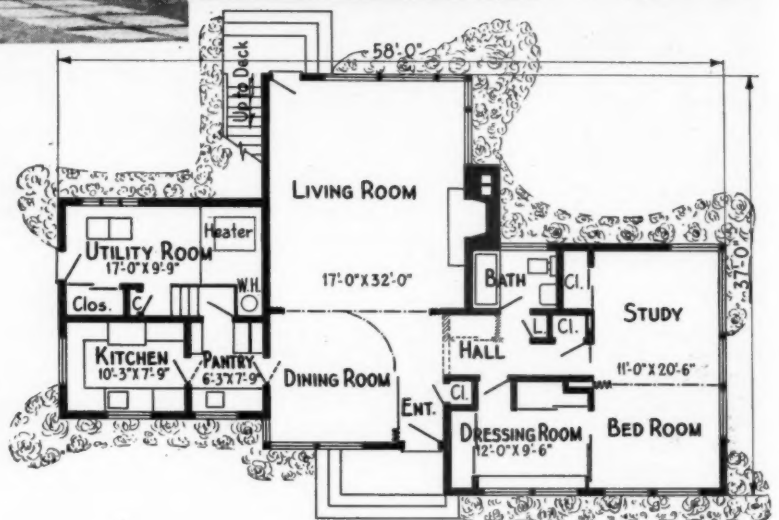




LEFT: Front view of the Idea House opened to the Minneapolis public June 1 and on display until December 1; sponsored by the Minnesota Arts Council and a group of forty cooperating business and labor organizations.

"IDEA HOUSE"

Latest in modern planning practice, materials and equipment presented in Minneapolis home project



BELIEVING that in not one per cent of the homes built today is full advantage taken of most of the new planning and building developments, the "Idea House" was created by the Walker Art Center and is now open to the Minneapolis public to demonstrate these opportunities. This contribution is the result of a co-operative effort involving contractors, manufacturers and their distributors and labor, working with the Minnesota Arts Council, Architect Malcolm E. Lein of Lein Tudor and Bend and general contractors Libbey & Libbey.

The theme of the Idea House is "ideas" which may be applied to a home of any price. It is not presented as a model plan, although actually the house would fit the needs of two people; and rooms might be added upstairs. Neither does it attempt to create an untried method of building. It is the hope of the sponsors that the important planning developments incorporated into it may be taken either singly or in combination for use in planning and building a better house for the average home owner.

The designers have explained that the most important idea of the house is spaciousness and in achieving this they have eliminated useless partitions, throwing the entire house open to be used at all times by the family and making the living rooms as large as possible. Following are explanatory comments by the Council on design and materials of each portion of it:

EXTERIOR—There has been no attempt to make this house conform to any style or historic type. The arrangement of the rooms and their relation to the lot was made to function for living before any thought was given to exterior appearance. The size and shape of the weathertight windows, for example, were determined entirely by the needs inside the house. If a house is properly planned for living, a beautiful exterior is only a matter of applying competent designing ability.

Special note should be made of the projecting louvers over the south windows. They are designed to keep the hot summer sun off the walls and windows. During winter, however, the sun, being lower in the sky, will strike the windows, giving heat and light in the room.

ROOFING—The roof of the house is the roll type of asphalt composition. The designers selected a plain type rather than the imitation shingle type for the sake of honesty and simplicity. This type of roof is both practical and economical.

ROOF DECK—Design: Most porches are open on one, two, or at the most, three sides—why not breeze with protection from every direction? A porch is an open living room and with the aid of a fireplace this one can be used many months during the year. Louvered rail lets in the sun and protects those sun bathing from being seen from below. An awning can be installed.

Materials: A canvas deck is long wearing and easy to keep clean, as well as giving protection to the room below. Screens are generally a necessity. Waterproof telephone jack and light outlets are provided.

ENTRANCE—Design: Serving the purpose of a vestibule and entrance hall this area, being cut off only by glass (see view on third page following), increases the apparent size of the living room and still protects these rooms from winter drafts. A large closet in the bedroom hall adjacent to end of bath tub has been left out during the exhibition. It will hold those special things, such as card table rack, wood box and vacuum cleaner (which is not used in the kitchen, so does not belong there).

Materials: The linoleum floor was chosen for ease of upkeep and long wear. The walls and ceiling match the living-dining room to tie them into one space.

LIVING-DINING ROOM—Design: This room is almost twice the average size of a living room and



ABOVE: Top view, porch showing fireplace, ventilating louvers, screen enclosure and canvas deck. Center, bedroom corner with unusual window grouping protected by projecting louvers; note also exterior sided with pressed tempered fibre board, roll roofing, gutters, metal areaway and ventilating louver. Bottom, view during construction.

RIGHT: Rear view of Idea House shows stairs to second floor living porch, ventilated on all four sides.

though the dining area is included it can be completely closed off while the table is prepared and cleared. In this way the dining room can be used for living during the many hours it ordinarily stands empty. The break in the ceiling plays an important part in giving the room interest and character. The large windows on the south with the interior flower boxes create the feeling that the garden is a part of the house and accentuate spaciousness.

Materials: The use of acoustical plaster combined with oak plywood allows interesting color and texture, as well as good sound effect. The easily installed, pre-finished block floor is used in this room as well as in the bedroom-study-dressing room. Note the interesting lighting effects in this room particularly. The use of light and shadow for decoration is generally neglected by the average owner.

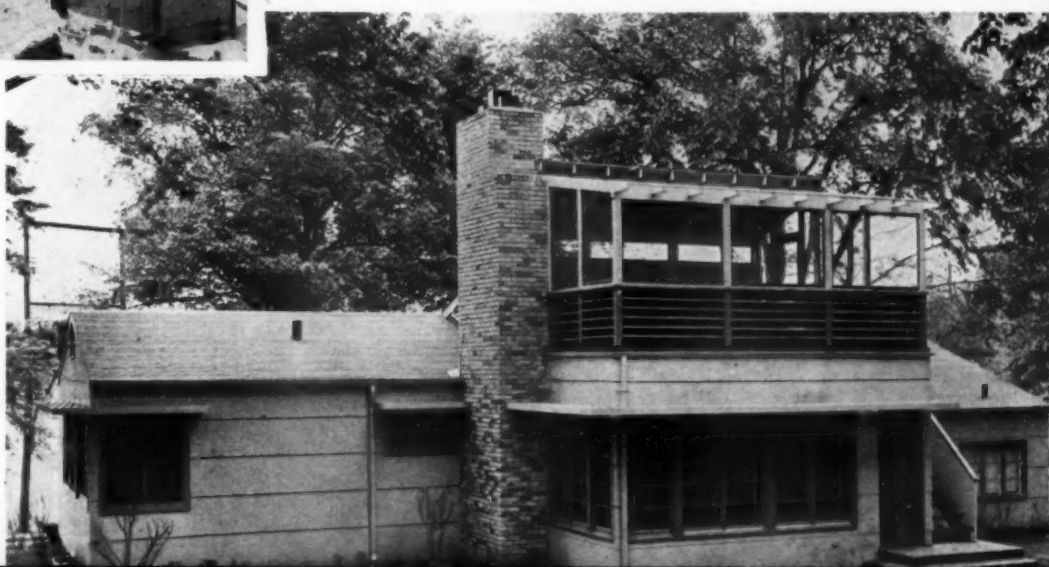
PAINTING—Color in the house has been achieved by the use of large, bold areas of color rather than through multi-colored patterns and small spots. The large areas are restful and, at the same time, give adequate variety and contrast. The mural around the fireplace is the only "figured" wall in the house and so receives its due emphasis. This mural is purely decorative. Fireplace facing is sheet copper.

DRESSING ROOM—*Design:* This is one of the often neglected "work areas" of a house. Sufficient and well designed storage space combined with plenty of room to dress and the elimination of unnecessary furniture facilitate an important part of a day's activities. A well planned dressing room leaves the bedroom free as secondary living or study space.

Materials: Simple built-in units painted with interesting colors and good lighting make this room beautiful as well as useful. The transparent plate glass partition makes the dressing room actually a part of the bedroom, giving the illusion of greater space, and makes a warm dressing room possible in winter.

BEDROOM-STUDY—*Design:* This room serves the purposes of master bedroom, guest room and study, giving the owner continuous use of the guest room when there are no guests and complete privacy when there are guests. In the average five-room house the guest room, occupied only 10 per cent of the time, is lost to the owner as living space and is only a storage and overflow area.

Materials: A sliding wall is an important feature of a multi-purpose room. The use of large windows for view and sun and smaller windows where ventilation is of primary interest should be noted throughout the house. Walls and ceiling are pressed wood wallboard.



BATH—Design: Simple, practical and easy to keep clean are the main points of a good bathroom. Excellent lighting and a heater which also dries clothes are of special interest.

Materials: Linoleum on the floor, walls, and ceiling is one of the practical materials that can be used.

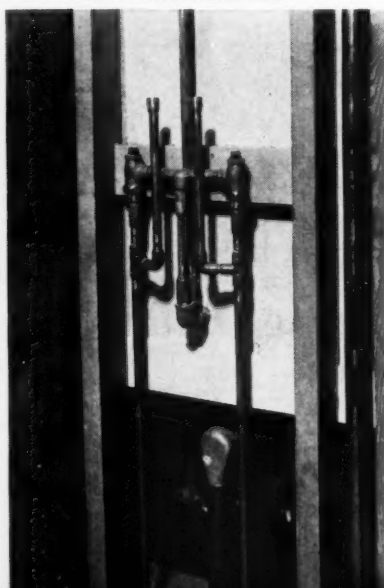
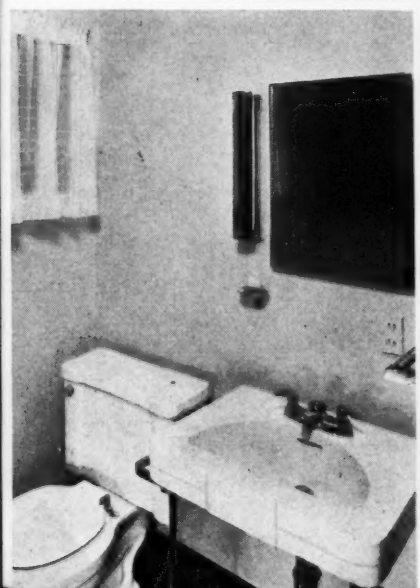
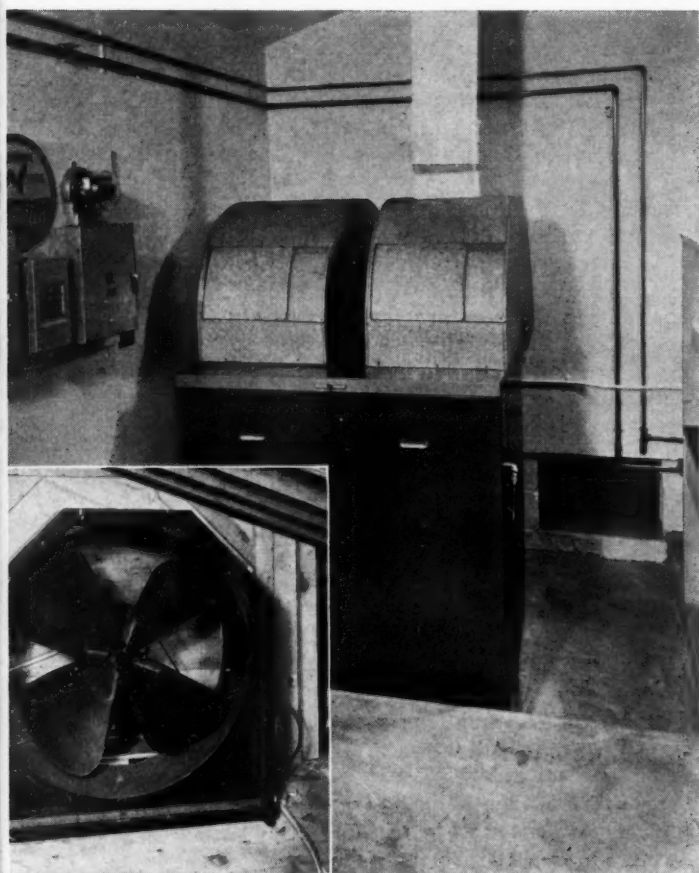
KITCHEN AND PANTRY—Design: The three standard work areas of a kitchen are properly located with ample counter space in this highly efficient kitchen. A kitchen large enough to move around in and yet small enough to save steps is important to any housewife. Note that the kitchen is not a hallway to the back yard, as it so often is in the average house. The pantry is used to take extra and conflicting activities out of the kitchen. (For example, deliveries which are not for the kitchen, flower and drink preparation, auxiliary eating and cupboard space for extra china, glass, linen, etc.)

Materials: Only efficient up-to-date equipment is used

in this kitchen. Note particularly the stainless steel walls which seldom have to be wiped and then only with a damp cloth. The fan over the range will keep cooking odors from going through the rest of the house. Fluorescent lights give ample illumination on all work areas. Cabinets are custom made to fill the entire room.

UTILITY ROOM—Design: Contrary to popular belief a basement is not essential in this or any climate. A first floor utility room can be built for less money and will bring work where air and sunlight are plentiful.

Materials: There is no need to hide plumbing pipes when made of copper, or be ashamed of your furnace or water heater. This equipment is now clean so there is no risk in putting it in the same room with the laundry. The system is "forced air heating and humidifying." During the summer an attic fan provides definite cooling at night. Heating outlets are small and inconspicuous and can be placed either high or low.



INTERIORS FROM THE IDEA HOUSE

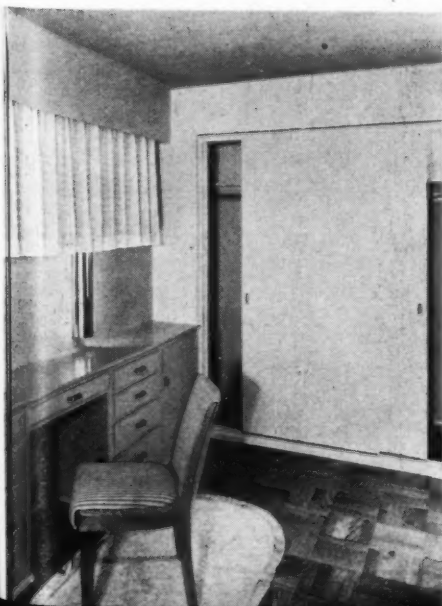
ON these two pages, views of the various portions of the Idea House present a roundup of latest and proven materials, equipment and their practical application.



Highlights—

CENTER and above views show such living room features as grouping of horizontal sliding case windows, prefinished block flooring, oak faced plywood wall panels, acoustical plaster ceiling, glass entrance partition, flush doors, dividing curtains, door chimes, modern lighting and linoleum entrance floor.

IN SMALLER, surrounding views starting at upper left on opposite page, note oil-fired winter conditioning unit, adequate wiring, streamline copper piping, attic cooling fan; clean cut bathroom with linoleum on walls, ceiling and floor; blanket insulation and soldered-joint concealed plumbing; complete kitchen cabinet installation, stainless steel walls, fluorescent lighting, all-electric kitchen equipment; dressing room partition of plate glass; wardrobe with sliding doors; folding wall; interior wallboard panels and tile.





A HOMEY LOOK and a practical plan are combined in this little defense type house designed by Architect Arthur Vickers.



Photo by Rudolph Leppert, Jr.

VARIATIONS in Colonial Park home designs are achieved by different gable and entrance treatments. Bay windows, shutters and latticed entrance appeal to buyers. Basic plan shown opposite.

Good for Defense —Worth Defending

**34' x 31' Colonial Park homes set
high standard of design**

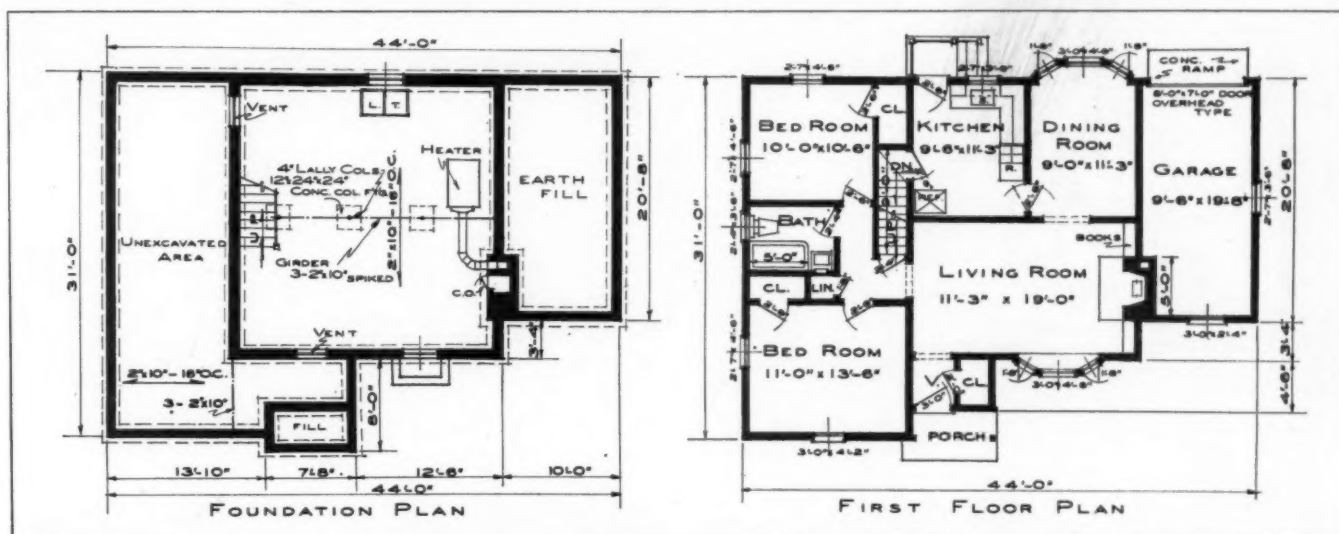
THESE four fine little homes show that charm, individuality and architectural appeal are possible even in the low cost brackets. These are the kinds of defense houses that are really worth defending and are a far cry from the monotonous shoe-box designs that have become all too common on government financed projects.

Gustav Feuerstein, the builder, and Architect Arthur Vickers have set a high standard in these homes, but have kept the price down. The basic plan, as detailed on opposite page, is only 34' x 31'. Individuality in the exteriors is achieved by variations in the gable and entrance treatments, by reversing the plan in some instances and by shifting the location of the garage.

Basing his plan on Macauley's truism that "the taste of the fish determines the bait," Architect Vickers perfected these little houses from a study of the ideas



FINE ARCHITECTURAL TOUCHES are possible in small defense homes, this unusually attractive Colonial Park house shows.



BASIC PLAN of Colonial Park homes is only 34' x 31', yet provides ample rooms, livable plan. Two additional bedrooms and bath may be provided upstairs. A. Vickers, architect.

of more than 50 plans designed especially for prospective owners. More than 100 houses have been built in the past two years by Colonial Park, Inc. The above houses are located in Port Chester, N.Y., which is within easy commuting distance of the Stamford, Conn., defense area.

Much of the appeal of these houses has been in the layout which provides for six good-sized rooms and bath, with attached garage, plus an undeveloped area on the second floor to provide for an additional bath and a 12' x 18' bedroom. One finished room 13' x 18' is included in the purchase price.

The structures have been planned mostly on the center

hall idea which gives freedom of access to all parts of the houses without the necessity of passing through the other rooms. And all rooms have been developed with an eye to utility. For example, each house has 57 conveniently located electrical outlets. All baths are tiled and windows and doors are weatherstripped as well as equipped with full length screens. Mineral wool insulation and an oil burner minimize household chores. A guaranteed waterproof foundation has been an effective sales appeal, as has been the use of edge grain red cedar shingles. Houses all occupy a plot of at least 60 by 100 feet, with the buildings well set back from the street.

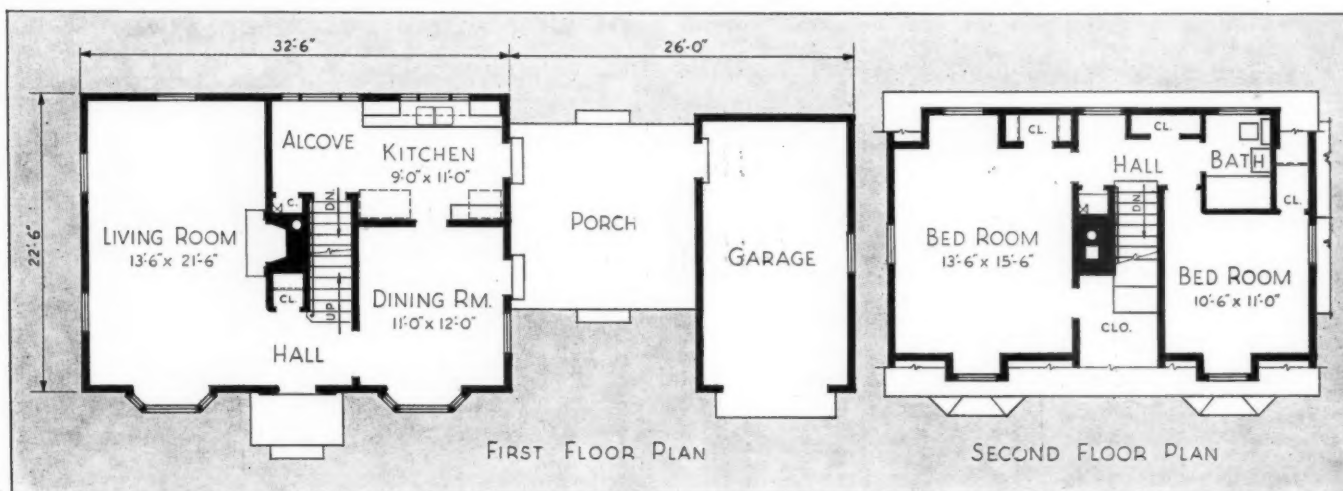


THE traditional type of styling of the front cover home, as pictured above and designed by Architect Gylleck, gives it a trim and appealing exterior; the massive stone chimney, twin bays and fine entrance contribute to its attractiveness.

Cape Cod Inspired— Well Planned for Modern Living

THE two very attractive story-and-a-half houses illustrated on these two pages offer a number of interesting comparisons in design and planning. They are both the work of The Architectural Drafting Service of Chicago, Elmer Gylleck, architect, and are built a block apart in Elgin, Ill. The one on this page more closely follows the traditional Cape Cod styling than the modernized version opposite. Similar in plan, they demonstrate how approximately the same amount of floor area can be arranged to suit the quite different requirements of two families.

In the one below, space in the rear of the stairs is used as a breakfast alcove and a separate dining room is provided. Living porch and rear entry are combined in the



THE five rooms and garage with connecting porch in this little home built in Elgin, Ill., are carefully arranged for modern living and good use of space.



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connection to the garage; there is direct access to both kitchen and dining room. On the second floor, two bedrooms, a bath and four closets are compactly arranged. The exterior is red cedar siding.

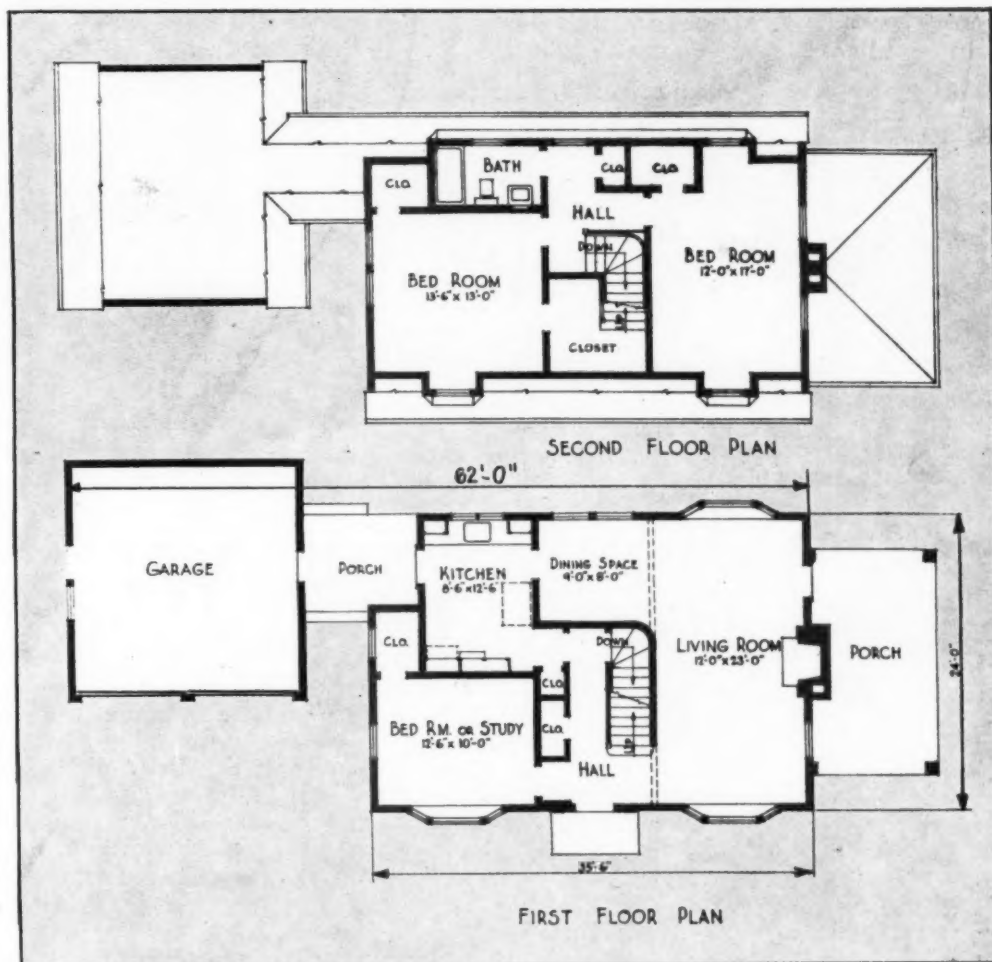
The sidewall material on the house below is red cedar shingles, and both houses use the same material for roofs. An extra room to be used either as a bedroom or study has been included on the first floor. Actually, in this house as built below, the owner uses this space as a library, and the closet as a powder room equipped with lavatory and toilet. The dining space, while small, can be enlarged by using that whole end of the living room when entertaining a large number of people.

The central stair hall connects with all rooms and the basement stairs, giving through access from the kitchen as well as allowing guests to go down to basement recreation space without going through the kitchen. In case the house should be sold to new owners who would want a separate dining room, a door can be easily cut through from the kitchen. In that case, the present dining space would make a fine library or music alcove. The living and service porches are both screened

in and add to livability in summer. The rear porch also provides protection to the two-car garage.

On the second floor there are two good sized bedrooms with ample closet and storage space. The bath is small but fixtures are well placed.

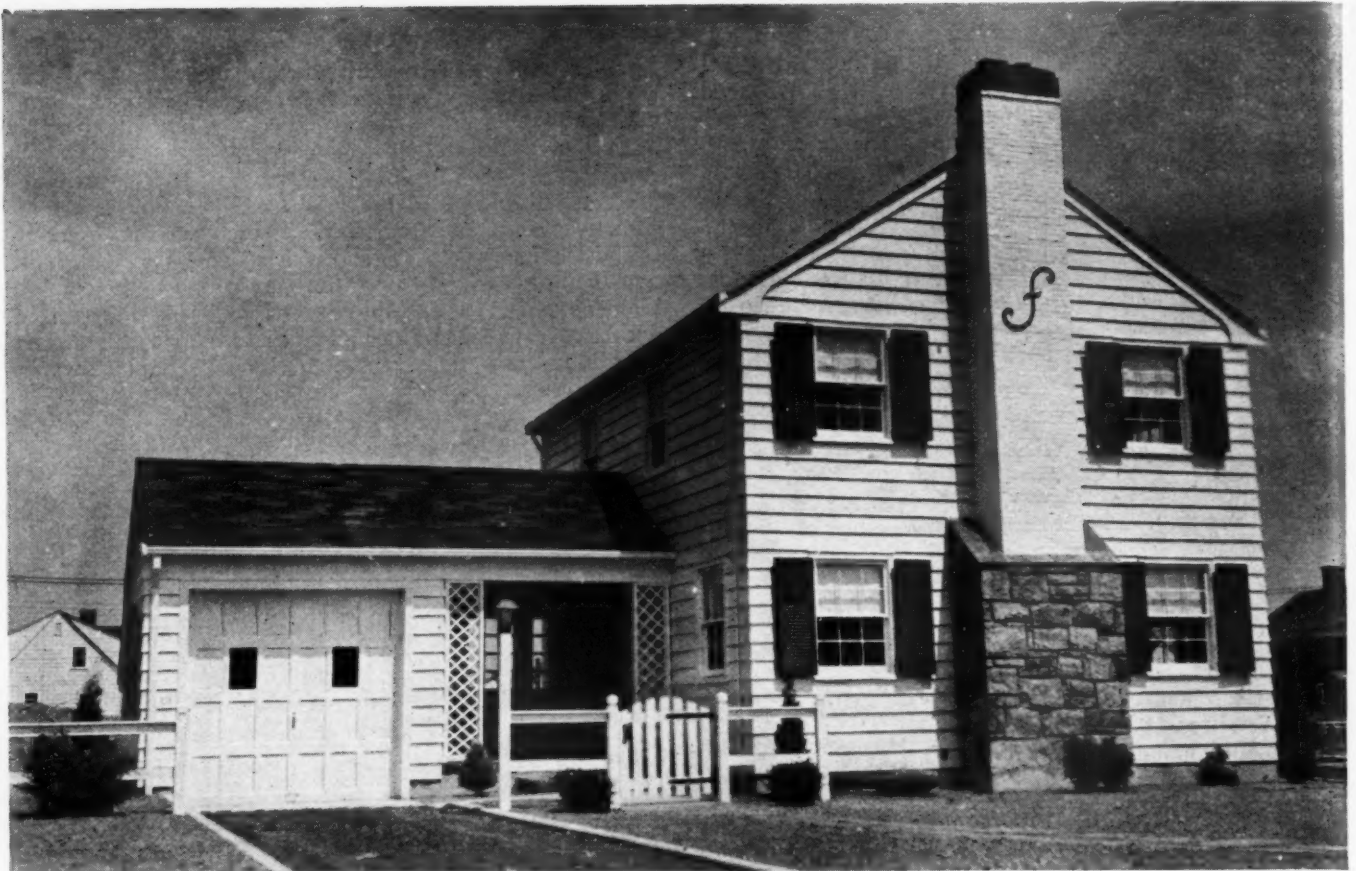
With the exception of the exterior sidewall materials finished with Cabot's Double White, both houses are of similar construction and have 10-inch poured concrete foundations, 3-coat plaster on Rocklath, rock wool fill over ceilings, oak floors throughout except linoleum in kitchens and baths. Equipment includes AGP gas-fired winter conditioning units, Crane fixtures, Midwest kitchen ventilating fans, Dietrich metal cabinets, and Edwards door chimes.



IN THE slightly larger modernized version of Cape Cod styling shown below, an extra bedroom is provided on first floor. In this design, Architect Gylleck has combined dining space and living room to give an open plan that offers a surprising amount of living area.

STREAMLINED dormers, wide, plain fascia and a simple entrance lend a modern flavor to the exterior at the right; this treatment is also carried out on the interior with rounded corners and plain surfaces. The screened-in porch at one side is balanced by two-car garage.





THIS UNUSUALLY COMPACT house is suitable for a defense home of the better type in many areas. Entrance is protected by the attached porch and is highlighted by the gate and fence. Designed by Alfred H. Ryder and built by the Frederic H. Ryder Corp.



Clever Use of 22' x 29'4" Plan with "No Traffic" Living Room—Attached Porch

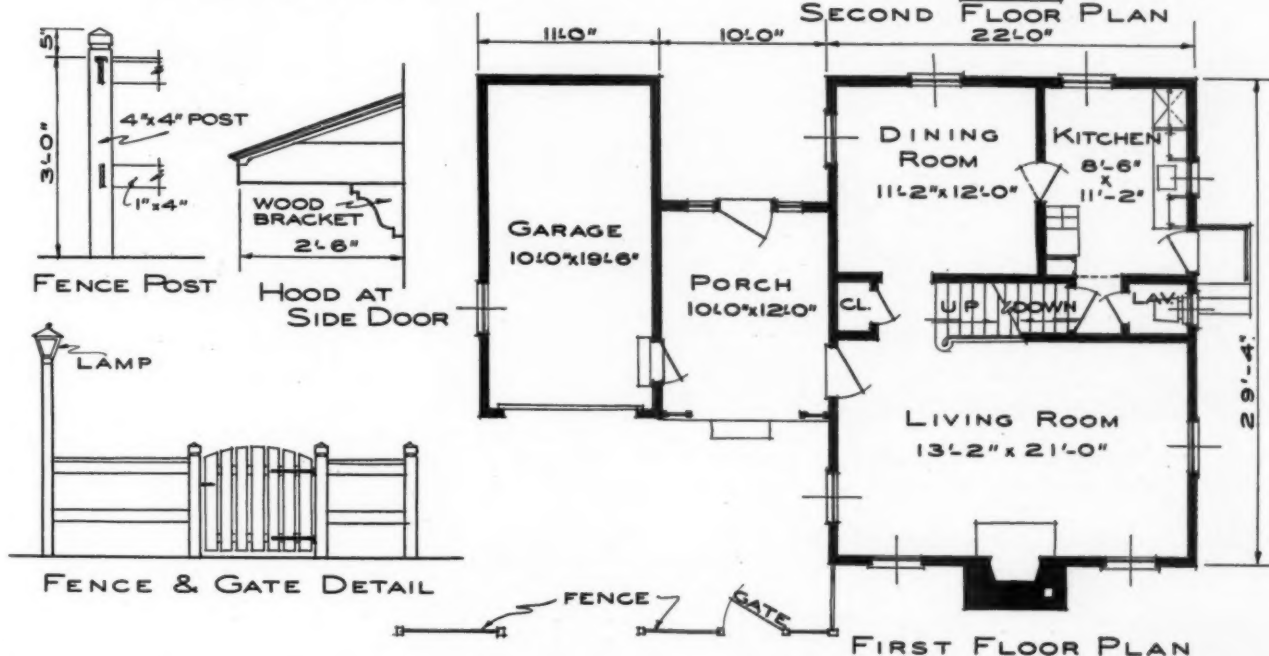
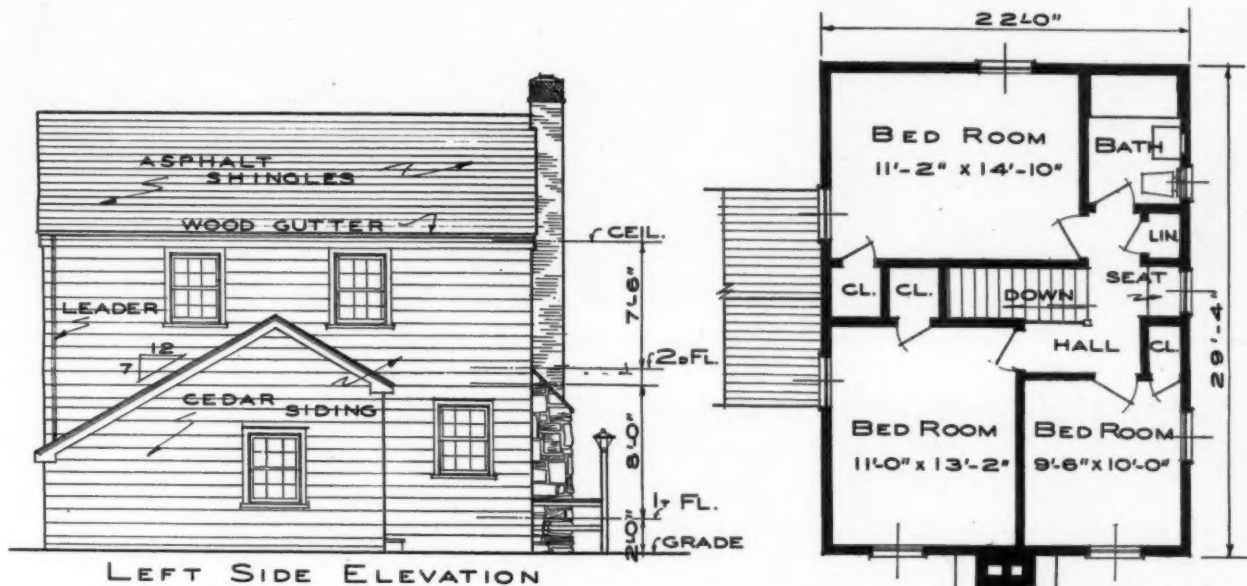
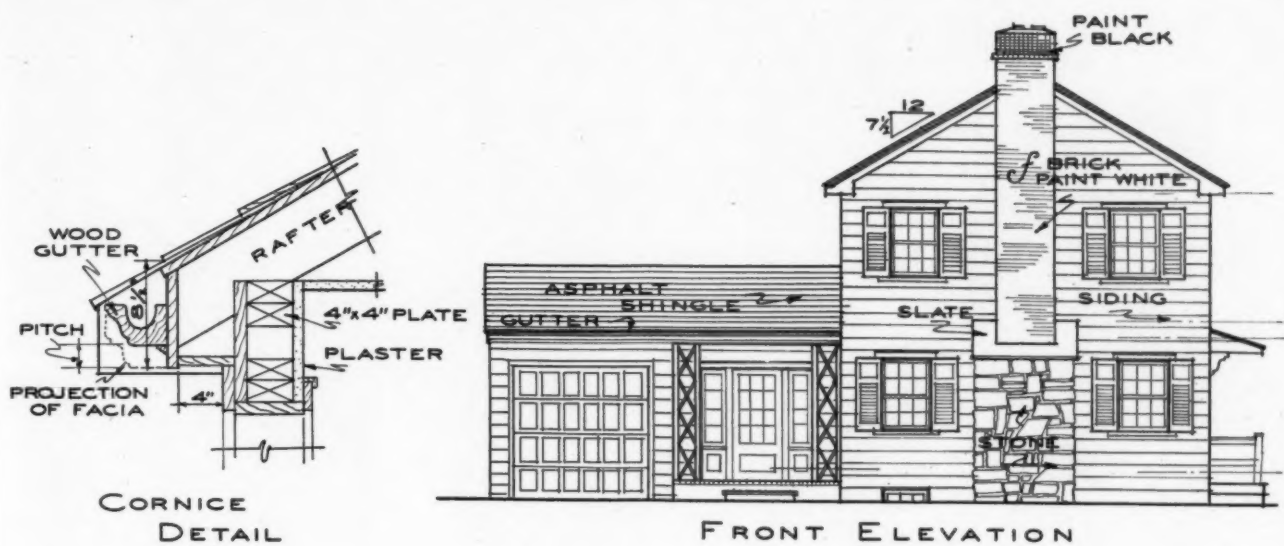
WITH everyone talking about defense housing it is important to see that all of the houses built are not of one similar shoe-box design. This little 22' x 29'4" house can be built in many parts of the country under the defense home price limitation. Yet it is different enough and attractive enough to be interesting. It was designed by Alfred H. Ryder of 1926 East 28th St., Brooklyn, N.Y., and built by the Fred H. Ryder Corp.

Outstanding is the sheltered attached porch which provides protection for the entrance. By placing the entrance as he has, Ryder has provided a "no traffic" living room. In other words, it is not necessary to pass through the living room in order to get to the stairs, kitchen or other parts of the house.

The basic plan is only 22' wide by 29'4" long and is a standardized arrangement that has proved itself many times over. The living room is well proportioned, with ample windows on three sides providing good ventilation and light. There is a downstairs lavatory, and 8½' x 11'2" kitchen.

Upstairs the plan provides a spacious 11'2" x 14'10" master bedroom, with bath conveniently nearby. Cubic contents are 22,000 feet.

Equipment includes a Stanley overhead type garage door, complete factory built kitchen cabinets by Boro Wood Products Co., beveled clear cedar siding on exterior walls, 3 coats gypsum plaster of USG Rocklath on interior walls, mineral wool blanket insulation in attic floor. Other equipment includes Standard plumbing fixtures, American Radiator Co. boiler and radiators, Chrysler Airtemp oil burner, Lightolier electric fixtures.



DETAILED DRAWING by Alfred H. Ryder shows attractive fence and gate detail, hood and cornice. Side entrance creates "no traffic" living room. Downstairs lavatory, kitchen and second floor bath have one soillpipe. Plan provides unusual amount of livable space,



CIRCULAR PICTURE WINDOW in this pleasant dining room by Architect R. A. Julian provides spot for plants and flowers.



CORNER CABINETS such as this, designed by Architect Arthur Vickers, beautify the dining room. Note flat plaster arch, chair rail and wallpaper.

HOME repairs, improvements and modernizing are taking the spotlight in many communities because the bulk of this type of work can be done without priorities or any kind of government red tape. Furthermore, curtailment of many types of public works and nonresidential construction will make labor and materials available in plentiful supply for modernizing work.

As a result of these factors many small building firms

No Priorities Needed for Most Modernization

are expected to find home improvements an important part of their business. Such work will be easier to get because the general public is making more money today and is in a mood to spend it for things that will give them some lasting value. Certainly, fixing up their homes comes under this classification.

Each of the pictures in this article has been selected to illustrate an interesting new idea or home interior as developed by successful architects and builders. These

ideas will apply for either new work or for modernizing. In the attractive dining room above, a host of clever ideas are suggested. Note, for example, the adjustable china shelves which allow the housewife to create whatever effect or display she desires. The scalloped treatment sets these shelves off particularly well. Note also the wide window bay covered with a sheet of glass so that the plants and flowers do not mark the wood.



WINDOW LEDGE and Dutch doors contribute to this study by Architect Eschenbach. Walls are Idaho knotty pine.



DOUBLE BUNK, designed by Architect Arthur Vickers, gives a nautical air to this boy's bedroom. Pine paneled walls, a colorful ceiling and the built-in shelves and desk made it unusually attractive.



SPORTS LOVERS will enjoy a game room such as this, designed by Architect G. Dewey Swan. On either side of the bar are spaces for fishing rods, flies, guns and a sportsman's library. Racks are protected by sliding glass doors.

Sportsman's Game Room and Basement Bar



HOUSEWIVES appreciate a basement bar such as this because it takes the bottles and mixings out of the kitchen. It also provides an added inducement for hubby and friends to have fun and relaxation at home.

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Old Home Expanded Commercially

Columbus, Ohio, job points way to profitable modernizing

CINDERELLA'S transformation from slavey to belle of the ball was no more startling than the rise of a coal bin in a remodeling job in Columbus, Ohio. Fiction's heroine would have been right at home since the fuel storage space has become a beauty shop.

Kenneth Deckard owned an old, well-built brick house at the corner of Livingston and Kelton Avenues in Columbus, but he wanted some stores. "Tear down the house and start from scratch" was the general advice he heard until he consulted Architect T. J. Tully.

Tully investigated the site, figured costs and possibilities and decided the house could be salvaged and made an integral and important part of an expanded building.

After partitions had been torn out and the floor plan of the old house changed, two suites for doctors' offices were laid out. One of the rear downstairs rooms became a luncheonette for the adjoining drug store that occupies the major part of the addition. The old coal bin became the beauty shop, which patrons enter through the new building. Besides bringing in an attractive rental, the shop gives its customers strict privacy. They enter at the street level, then walk down a few steps to be glamorized where prying eyes can't see them.

The addition houses a bake shop as well as the drug store and beauty shop. The new portion is constructed of Armco Paintgrip Steelex panels. The roof is of Steelex panels on which mineral wool insulation was laid before sheathing and waterproofing material were placed.

The Steelex roof deck played a dual role at single cost. The panels were installed with the smooth side downward, so that the under surface became the ceiling below.

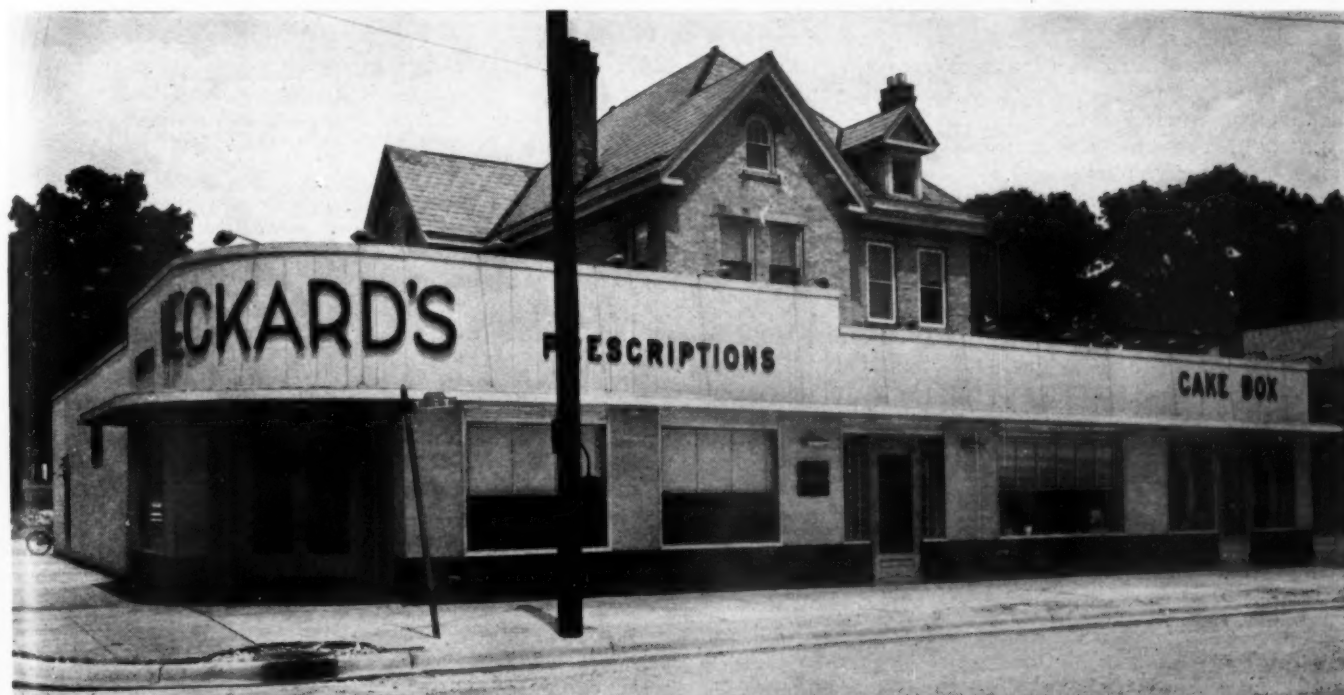
The 6,200 square feet of Steelex side walls and roof, used in combination with plaster and other insulating material, made the structure air tight. During the summer the interior was comfortable because hot air was

largely shut out. During the winter heat is supplied with an air conditioner for the drug store and concealed radiation for the rest of the building. Drug store, lobby, one doctor's office and beauty shop are air conditioned.

The shallow but strong steel panels also give more interior floor space. Approximately a foot was gained on both length and width by this choice of materials.

The attractive, practical corner building has facings of sandstone and slate, from the decorative canopy downward. Above the canopy, which is intended for architectural effect, exposed Steelex is painted to match facing.

Inside walls and ceilings are painted in contrasting pastel shades. Indirect illumination heightens the effect of lightness and space. Glass brick at the entrances, stainless steel fixtures and panels over mirrors and streamlined display cases enhance the cheerful interior.



American Rolling Mill Company photo

FROM CORNER RESIDENCE to business and office block in one easy operation is the story of this building owned by Kenneth Deckard, Columbus, Ohio. Architect T. J. Tully skillfully redesigned the house into doctors' suites and added stores as shown.



ATTRACTIVE apartment building in Montgomery, Ala., has unusual ironwork decoration; fence previously surrounded house on this site.

16-Unit Apartment on Old Residential Site

IRON grillwork distinguishes the new 16-unit, two-story Vandiver Apartments erected in Montgomery, Ala., by Bear Lumber Company and designed by Architect Edward D. Stone of New York with Moreland Griffith Smith of Montgomery as associate architect.

An old iron fence which had protected residence property at the location for 50 years was left standing, and in addition iron lattice work was included for the railing of the second floor stoop of the new building and for the entrances on the ground floor in one wing. Thus the building was given a flavor of the old South.

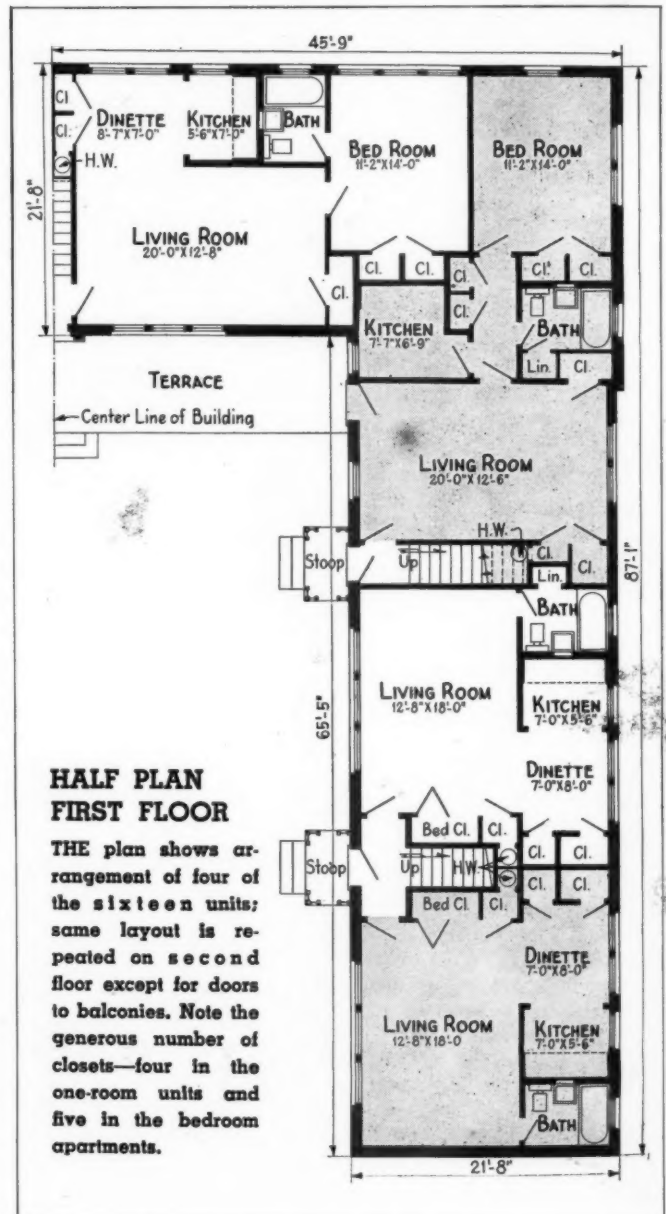
The building is of brick, painted white, with a Ruberoid composition roof. Eight of the apartments are of the efficiency type with roll-away bed in the living room, and eight are one-bedroom size. Cross ventilation is a feature of all apartments.

The building is not a perfect court-type plan, reversing on the center line as shown at the right. An unusual feature is that the three units toward the front are carried directly across the court, retaining the front entrances on the left side of the wing, and allowing the living rooms to face in the same direction rather than all facing the court. This gives rise to one other slight variation—in the third apartment from the front, the entrance off the terrace occurs at the rear of the living room.

All rooms have plastered walls and ceilings except kitchens and bathrooms which have walls and ceilings of Keene's cement. Bathrooms are tiled and equipped with Standard fixtures. Kitchens are efficiently planned with Parson's Co. units and provide gas range, sink, electric refrigerator, overhead cabinets and inlaid linoleum on the floors. The building is equipped with Venetian blinds, Corbin hardware, Grand Rapids sash balances and Peerless gas heaters.

The basement of 720 square feet provides space for laundering, also for the automatic gas-fired, steam heating plant. The entire building is insulated with four inches of rock wool.

After completion several apartments in the building were furnished by a local furniture store and left open several days for inspection. The apartments rent for \$37.50 to \$47.50. This is one of the first apartments to be erected in the city since 1929.



"Blackout" Bomber Plants Built in South

Fiberglas Insulation Will Insure Efficiency and Comfort in Air-conditioned Assembly Building 4000 Feet Long

A NEW TYPE of shatter-proof, non-combustible side wall and roof construction combining three types of glass fiber and prefabricated steel panels is being used to insure insulation and acoustical control for working efficiency in the twin 4000-foot long Army bomber assembly plants being erected at Fort Worth, Texas, and Tulsa, Oklahoma.

Engineers of The Austin Company, which designed both plants, evolved the ingenious combination which utilizes products developed by Truscon Steel Company and Owens-Corning Fiberglas Corporation in an entirely new approach to the task of insulating vast factory areas for economical year-round air-conditioning.

With a total of 406 carloads of fiberglas required for these jobs—203 carloads for each plant—they will probably contain more glass in their windowless steel side walls and roof than the largest daylight factories ever built. By blanketing all interiors with several layers of these materials, which are calculated to eliminate or control all condensation and to reduce heat transference to a practical minimum, the cooling load has been substantially reduced.

The plants are so large, however, that each requires 7000 tons of refrigeration—enough to operate more than a quarter million large household refrigerators—which is more cooling than that installed for all the central air-conditioning systems at Rockefeller Center.

These facts, and other features designed to insure year-round working comfort, economical operation and production efficiency in the two plants, where a total of 30,000 men will be soon assembling four-engined bombers on moving assembly lines, were disclosed in September when the Austin organization started erection of side walls for the Fort Worth plant.

There, alternate layers of fiberglas and special vapor seal paper, held together with asphalt, are being combined with steel channels, roofing sections and metal lath to give the walls and roofs of all buildings maximum strength and the highest obtainable acoustical, insulating and light-reflecting qualities.

Notable for their size alone, these bomber plants serve to indicate the scope of the factory building program now under way from coast to coast to meet demands of the national defense emergency.

Each of these plants will be longer than the combined length of the world's four largest ocean liners—the Queen Elizabeth, the Queen Mary, the Normandie and

the Bremen—and large enough to accommodate 33 super-theaters, with stages and a seating capacity of more than 213,000 persons on one floor.

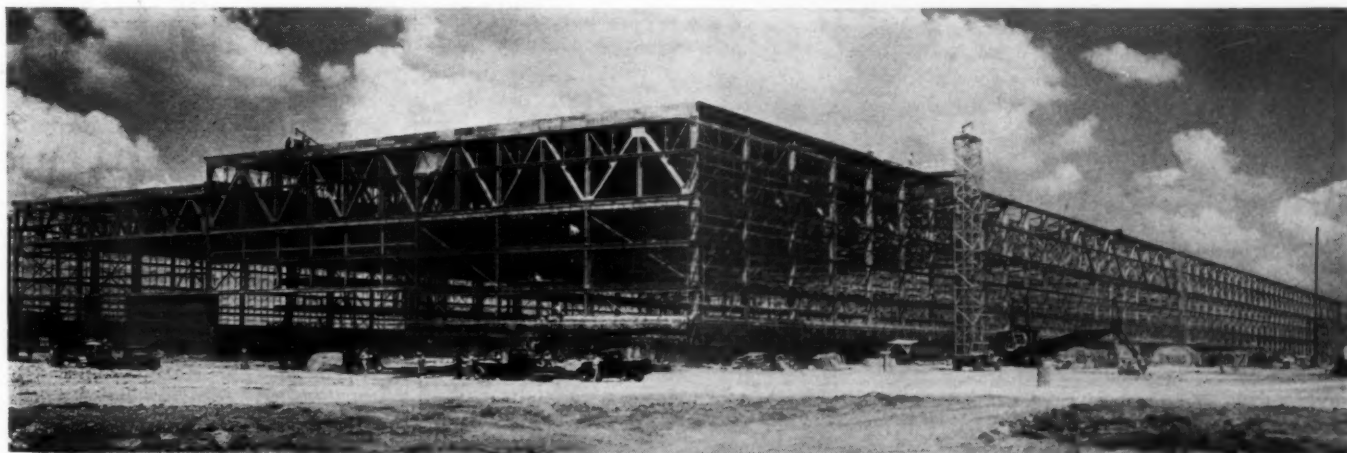
Both plants are being built for the War Department under direction of the U. S. Corps of Engineers, who have a staff of 30 engineers and 238 inspectors, auditors and clerks on the job at Fort Worth. The Austin Company has its own staff of 102 engineers and 20 clerks at work on plans, specifications and the detailing of mechanical equipment and production layouts for the two plants in a downtown office building there, where Consolidated Aircraft Company, which will operate the Fort Worth plant, has its own consulting engineer. They all work seven days and three evenings a week, or a total of 65 hours.

Another group of 147 Austin engineers, superintendents, auditors, purchasing agents and clerks are located in field offices on the 1450-acre bomber plant site overlooking Lake Worth, where 3500 construction workers are building the plant on a two shift schedule that runs from 5 a.m. to midnight, seven days a week. This crew will soon reach 6000.

(Continued to page 112)



FIBERGLAS and steel being combined in successive layers in roof of Ft. Worth bomber plant. Below, view of completed framework.





EVERYTHING that goes into a house comes from one warehouse. Here a huge load of mixed items for a single house is being carefully checked before starting on its way to the builder's job.



SKILLED shop workmen make special millwork details at low cost in Mott factory; here E. C. Mott inspects a special frame.



ALL WOODWORKING and cutting are done in the Mott factory, enabling the use of many attractive bracket and trim details that would be too costly to do on the job or to order as a specialty

A Factory for Tailored Homes

Builders' service organization blends prefabrication and custom building. Supplies builder with heating and plumbing as well as lumber, millwork and mason's supplies. Doors and windows pre-fitted, delivered in frames with hardware and glass installed.

AN ingenious short cut between the economies of large scale prefabrication and the privileges of individual house design has been devised on a working basis by two young New Yorkers—scions of a family identified with the home building industry for three generations.

After having erected thousands of dwellings in approximately 17 years, they have withdrawn entirely from actual building and have set up a home builders' service organization that is unique and may have a revolutionary effect on New York suburban building.

These young men are Harold B. Mott and Edward C. Mott, brothers. Thoroughly experienced in the practical end of home building, they became convinced that if the same economies of operation enjoyed by the big developers were available to individual contractors, not only could hurdles of competition be surmounted, but definite benefits could be extended to the consumer.

The Motts recently took over a new warehouse at 131-33 Avery Avenue, Flushing, virtually in the geographic center of the New York territory, with a capacity for turning out supplies and equipment for as many as 1,000 new suburban homes every year.

At the time *American Builder* interviewed Mott Bros., 13 extensive community developments were going forward in the New York suburban districts under the aegis of Mott Brothers, Inc., and twice as many builders were engaged in the construction of individual dwellings on separately owned plots for clients building on private contract.

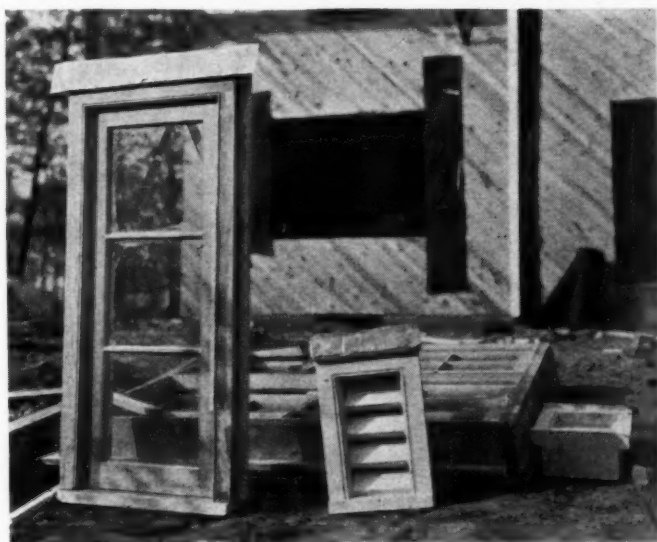
Mott's service to contractors and operative builders includes complete architectural and decorating service, arranging of financial and legal details, sales assistance, and the supplying of all lumber, brick, plumbing, heating, door knobs, wiring and every item that goes into the house. The operative builder is quoted a complete price for every item involved in the construction of a house, and knows before he starts exactly what his costs will be for all materials and equipment. He is also able to estimate his labor costs more exactly because he has the benefit of the Mott experience in building standardized types of houses in which every operation has been studied and performed many times before.

The Mott organization is an accredited material and supply dealer, but in addition to handling the usual ma-

SHOP-BUILT bay window is here seen as it is about to be set into place in the opening. Window is delivered to job complete with flashing, glazing, weatherstripping and a coat of paint. Note attractive ornamental detail as made in Mott's factory.



SEEN BELOW are additional millwork items as delivered to the job complete with flashing, hardware and prime coat. Practically all skilled woodworking is handled in the shop.



materials, sells plumbing, heating, wiring, kitchen equipment and all the other thousand and one items that go into a complete house.

Mott Brothers buy all materials and supplies and process them to the greatest degree in their own warehouse. They deliver them to each job daily, as needed, so that one truck, for example, draws up to a job with all the shingles, all the plaster, all the paint, that will be needed in that day, instead of half-a-dozen trucks standing around, one with a handful of plumbing couplings, one with a bag of lime, one with a load of shingles, one with a package of hinges, and so on.

Mott Brothers draw up the specifications for every job along standards they are willing to be identified with. One set of blue prints goes to the job, one is filed in the office, and one goes to the warehouse where it is checked daily against field inspectors' reports to insure deliveries when required. In other words, the superintendent of the warehouse knows the exact status of each

(Continued to page 110)



DOOR IS HUNG in factory and delivered to job complete with hardware, latches, locks, hinges, glass and prime coat. The same is true for all other items such as cabinets, drawers and cases.

Is this a future pattern for metropolitan building? Read how an experienced operative builder gave up construction to set up new 100 per cent supply service for contractors within 50-mile radius

SERVICE TO READERS

EACH ITEM in this department is numbered for convenience of readers. Please use the coupon on page 76 for requesting further product information or new catalogs. Mail coupon to American Builder Reader Service, 105 W. Adams St., Chicago; or write direct to manufacturers at addresses given, mentioning your profession, occupation or business connection with building industry.

WHAT'S NEW IN BUILDING MATERIALS

AB748 "Case Study No. 1—Radiant Heating in a Small Residence" is a 4-page illustrated data sheet from A. M. Byers Co., Pittsburgh, Pa. It is the first of a series illustrating and describing in popular terms actual installation and heating results from this very new and revolutionary type of under floor heating. This Case Study No. 1 covers the radiant heating installation in the Notz residence, Mifflin, Pa. Frank Lloyd Wright, architect. This is a single story, country house in the \$10,000 bracket.

AB749 "Frozen Food Locker Plants Insulated with Palco Insulation Wool" is a 20-page portfolio from The Pacific Lumber Co., San Francisco. It discusses the operation and design of locker plants and illustrates quite a number of the 1,000 plants that have been insulated with Palco Wool. Frozen food locker plants are going up all over the country, in small towns as well as large, making this one of the country's fast growing industries.

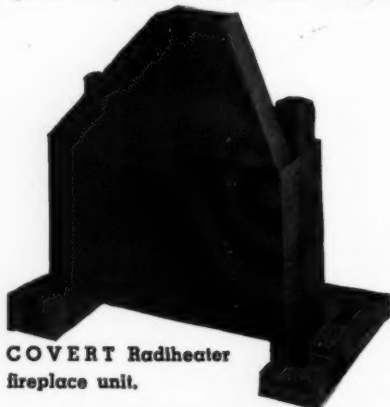
AB750 "F and L Horizontal Sliding Window," a new product of the Farley & Loetscher Mfg. Co., Dubuque, Ia., is presented in a new 4-page illustrated data sheet. Nine distinct advantages are listed for these windows, which are offered as something that "will revolutionize residential fenestration." Stock sizes and installation details are included.

AB751 "Tomorrow's Homes for the Many as Conceived by Norman Bel Geddes" is a 12-page brochure from Revere Copper and Brass Inc., 230 Park Ave., New York City. This is offered with an introduction by Revere's president, C. Donald Dallas, as the first of a series to bring to the American public the concept of leading architects and designers for homes of the future.

AB752 "Facts About the Magic of New Double Value Balsam-Wool Sealed Insulation" is a 20-page multi-colored handbook from the Wood Conversion Co., St. Paul, Minn. Important chapters cover such subjects as Things You Should Know About Insulation, Condensation—Its Cause and Cure, and Questions and Answers Regarding Insulation. The new double value Balsam-Wool is featured and three houses of varying size and design are analyzed for proof of its performance on the job.

AB753 "Heavy Duty Flooring and Roof Decking of Southern Pine" is a revised technical publication for architects, engineers and contractors by the Southern Pine Assn., New Orleans. It contains design information and furnishes a description of various grades of southern pine suitable for many uses.

AB754 To meet the needs of fireplaces on inside chimneys, basement fireplaces and where outlet grills must be less than five feet above the hearth, the H. W. Covert Co., E. 48th St., New York City, has introduced a "recirculating" fireplace unit, called Radiheater. Offering



COVERT Radiheater
fireplace unit.

as far as possible the same advantages as the Thermosaire "fresh air" unit made by the same company, Radiheater provides heating chamber outlets which are directly connected with the hot air outlet grills by means of standard piping, to prevent heat wastages en route. Also, it is made with square sides to give a wider back and increased heating capacity. Radiheater is available in seven standard sizes, measuring from 28 inches to 60 inches in width, and from 28 to 40 inches in height of opening.

AB755 The technical staff of the National Lumber Mfrs. Assn., Washington D. C., has just completed several months' study of all data available on the subject of sheathing. A complete summary of this exhaustive study, which includes analysis of test data from several universities and government bureaus, has just been made available in a 32-page illustrated booklet, "A Manual on Sheathing for Buildings." This publication is intended primarily for use by architects, builders, building material merchants and other members of the building profession.

AB756 "Facts You Should Know Before You Build a Garage" is a new 20-page handbook prepared by Joseph Weston, nationally known residential architect, and published by the Fir Door Institute, Tacoma, Wash. Probably the first booklet of its kind, it offers concise, readable tips for building usable garages. Half of the guide is given over to illustrations with at least one sketch on every page. Diagrams of convenient driveways are given and the author warns that leaving driveways to chance often results in disgruntled car owners. A nominal charge of 10 cents a copy is placed on this handbook.

AB757 The new USG Random-Tab shingle is dramatically presented in full color in a new deluxe folder from the United States Gypsum Co., Chicago. It shows the several colors in which this new shingle is available and shows how strip shingle economy is retained in this "custom-cut" roof of character.

AB758 Sisalkraft for backing up stucco is featured in a new 4-page leaflet from The Sisalkraft Co., Chicago, Ill. It offers a practical solution to the problem of making stucco moisture proof and wind proof. The function of strong building paper for use either with wood sheathing or for fiber board sheathing is clearly shown.

AB759 Insulux glass block for heating, light and for maintenance problems are the subjects of three 4-page data sheets recently prepared by the Owens-Illinois Glass Co., Toledo, O. Each is well detailed, filled with definite design and installation data and attractively illustrated.

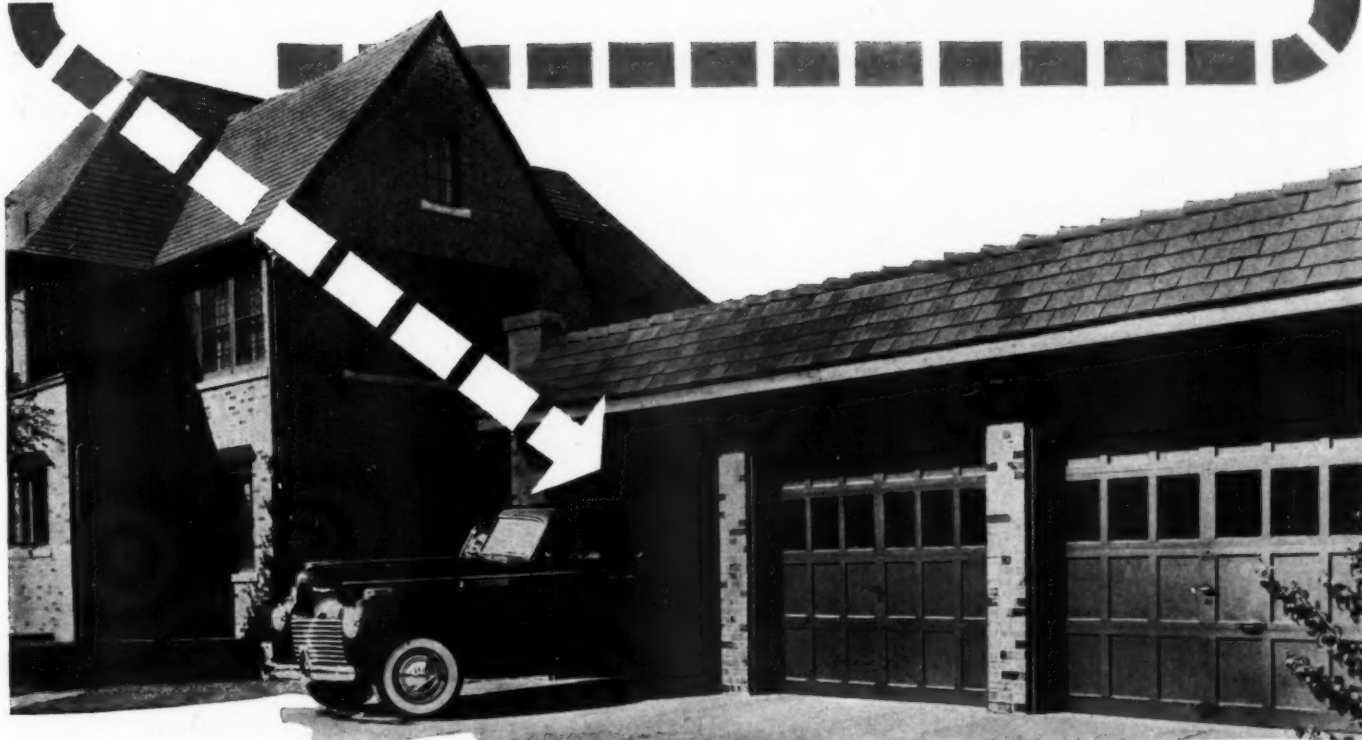
AB760 "The Water-Bug and the Goat" is a very readable, yet practical 8-page brochure by James Stewart, paint technician, the Eagle-Picher Lead Co., Cincinnati, on the problem of securing satisfactory painting results over moist surfaces. It deals both with the causes and cures of the moisture problems.

AB761 "Let's Build a Wood Fence" is the title of a very attractive 16-page design portfolio prepared by the National Lumber Mfrs. Assn., in cooperation with the Western Pine Assn., 510 Yeon Bldg., Portland, Ore. It is profusely illustrated with many types and varieties of wood fences and gates.

Readers Service Department Continued to Page 74

FOR QUICK, CONVENIENT SERVICE, USE COUPON, PAGE 76

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Listen to their quiet operation. Feel the added strength of "Tailor Made" Spring Power. Examine those watchful parts of the simple Ro-Way mechanism that keeps the sheave wheels in true alignment, and the Ro-Way Door from sticking and binding. Note the metal finishing process that keeps the hardware parts from rusting and corroding, and see the new feature that makes even the rarely needed spring adjustment a matter of quick convenience. Best of all, you get all that Ro-Way gives without extra cost.

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Sales offices with competent installation engineers, are located in principal cities. Write for name of one nearest you; also for Free Ro-Way Door Folders, Prices and Complete information.

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736 Holton St., Galesburg, Ill.

Gentlemen: Please send me Free Descriptive Folder and Price List on Ro-Way Overhead Type Doors.

Name

Address

City..... State.....

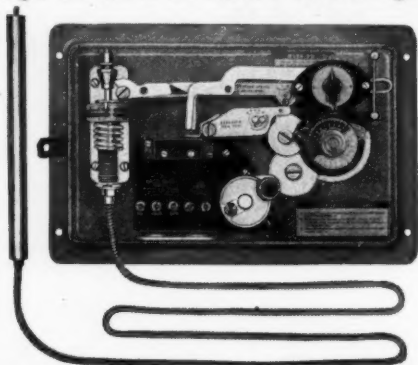
There's a Ro-Way for every Door way!

SERVICE TO READERS

EACH ITEM in this department is numbered for convenience of readers. Please use coupon on page 76 for requesting further product information or new catalogs. Mail coupon to American Builder Reader Service, 105 W. Adams St., Chicago; or write direct to these manufacturers mentioning your profession, occupation or connection with building industry.

EQUIPMENT ITEMS FOR MODERN BUILDINGS

AB762 A new, low priced heating system regulator, which controls heating in accordance with outside temperature, has been developed by the Marsh Tritrol Co., 600 S. Michigan, Chicago. Known as the model 7 Tri-trol regu-



MARSH heating regulator controlled by outside temperature.

lator, it offers in one compact instrument all the various controls and switches necessary for complete automatic heat regulation based on outside temperature. It is particularly suited for multiple occupancy of buildings, such as hotels, factories, apartments, stores, offices, schools, etc. The manufacturer particularly emphasizes the point that its low cost justifies its profitable use not only in larger buildings, but in smaller buildings down to two-family apartments. The new model 7 Tri-trol regulator automatically changes the starting time of the system each morning in accordance with every change of outside temperature to assure comfort at the start of the day. During the day it operates the system often enough, and long enough—as guided by outside temperature—to maintain even, comfortable inside temperature. At nights it shuts down the system—again automatically, in accordance with the outside weather.

AB763 An informative data sheet on the Austral sash sustainer is available from the Austral Window Co., 101 Park Ave., New York City. This illustrates and describes the Austral and gives detailed illustrations showing how it should be applied for the control of double hung windows.

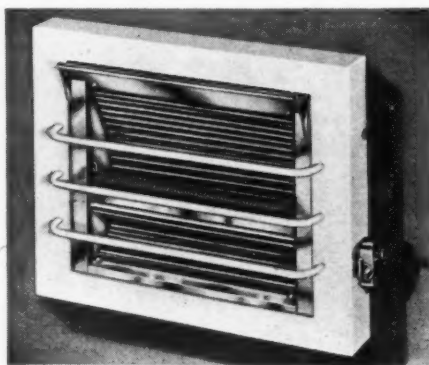
AB764 "Fluorescent Lighting" jobbers bulletin No. 105 is a 16-page, 2-color catalog from Fluorescent Fabricators, Inc., 5151 Natural Bridge Ave.,

St. Louis, Mo. It presents a varied line of fluorescent lighting fixtures for the home, office and retail shops. Price list is included.

AB765 A new Edwards door chime catalog has been prepared by Edwards & Co., Norwalk, Conn., to illustrate the 1941 models. It is a 16-page illustrated brochure and includes a chart which will serve as a useful guide in selecting a proper chime for any type of decorative scheme. Eleven different period designs are offered in this brochure.

AB766 "Catechism of Electrical Machinery" has been prepared by Fairbanks, Morse & Co., Chicago. A 48-page handbook for everyone concerned with electrical machinery either as installed in buildings or for use in industry. A foreword states that it is published to present in a simple way the most important theoretical and practical features of the common types of direct-current and alternating-current motors, generators and control equipment.

AB767 The new Humphrey Rafire No. 2 wall heater is offered by the General Gas Light Co., Kalamazoo, Mich., as a distinct innovation in gas burning wall type heaters. It has a Chromel heating element and an efficient burner



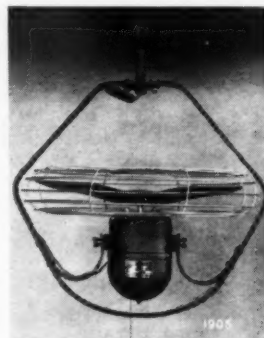
HUMPHREY Rafire No. 2 wall heater.

which quickly heats the Chromel element to a beautiful incandescence. The polished reflector radiates this heat into the room. Size is 16½ by 13 by 2½ inches.

AB768 A new 6-page folder from The B. F. Goodrich Co., Akron, O., features Air-Cell for upholstery uses and is of interest to architects

and builders for specifying for built-in seats, settees, theater chairs, etc. Sizes of stool cushions available listed as well as stock sizes of cored and solid slabs.

AB769 Wasted ceiling heat can be brought down to heat the lower parts of a room by use of the new Reco heat circulator, developed by Reynolds Electric Co., 2650 W. Congress St., Chicago. This power fan blows the air to the ceiling, then down the walls and back again, causing complete air circulation in the room providing uniform temperature.

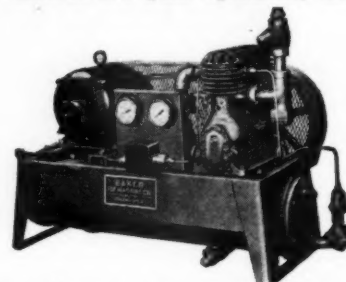


RECO heat circulating fan.

AB770 "How to Assemble Lindsay Structure" is an 8-page data sheet released by the Dry-Zero Corp., 222 N. Bank Dr., Chicago. It illustrates and details this ingenious sheet metal assembly. It is a light prefabricated construction which can be used for many purposes including machine housing, truck bodies, industrial buildings, ovens, unit coolers, shipping containers, and other space enclosures.

AB771 Revised asphalt specifications for roads and streets have been prepared by The Asphalt Institute, 801 Second Ave., New York City. Asphalt construction specification booklets are ready, designated R.M.-1, R.M.-2 and S-1, concerned respectively with road macadam aggregate, dense graded aggregate and old bituminous surfaces to be surface treated.

AB772 The Baker Ice Machine Co., Inc., Omaha, Neb., has developed the Baker "Freon-12" unit for refrigeration and air conditioning. Its features are quiet operation, ease of



BAKER "Freon-12" unit for refrigeration and air conditioning.

installation and small space requirement. It has a 4 cylinder compressor. A complete range of sizes is offered.

Readers Service Department Continued to Page 76

FOR QUICK, CONVENIENT SERVICE, USE COUPON, PAGE 76



**Not much more
expensive than
plain plaster!**

IF YOU are building or re-modeling homes or offices of any sort, consider this: For nearly the same cost as plaster, you can buy the extra distinction, the extra beauty, the extra *value* of Mengel Bord!

Mengel Bord is fine, hot-press, resin-bonded plywood, 1/4" thick, in big 48" x 96" sheets. Genuine hardwood *throughout*—with the grain running the long way, and with faces of Gum, Mahogany, Walnut, Birch or Oak—Mengel Bord is the *ideal* building panel for almost every use. . . . Free from grain-raising—finishes

more easily and economically, whether with stain, wax, paper or paint!

And costs are low. Because of the revolutionary new method by which it is manufactured, Mengel Bord sells at little more than the price of ordinary soft-wood panels!

Discover the full advantages of Mengel Bord, now! If your usual plywood source cannot supply you, write us direct for all the facts! The Mengel Co., Incorporated, Louisville, Ky.

MENGEL BORD

SERVICE TO READERS

EACH ITEM in this department is numbered for convenience of readers. Please use coupon on this page for requesting further product information or new catalogs. Mail coupon to American Builder Reader Service, 105 W. Adams St., Chicago; or write direct to these manufacturers mentioning your profession, occupation or connection with building industry.

AB773 Illustrated herewith is the Carter J-4 power plane developed by the R. L. Carter Div., The Stanley Works, New Britain, Conn. It is a $\frac{3}{8}$ h.p. electric plane used by builders, contractors, furniture manufacturers and others to plane wood up to 2-5/16" wide.



CARTER J-4 power plane.

Its high speed (18,000 r.p.m.) and patented spiral cutter leave a smooth cut in any kind of wood, with or against the grain. Cutter is adjusted for depth by means of a dial on the front of the plane. The plane can be converted into a bench jointer by means of the bench bracket, which is standard equipment. A grinding attachment is also furnished for grinding the cutter so that it can always be kept keen. The adjustable fence can be set for straight or bevel cuts up to 45 degrees. The $\frac{3}{8}$ h.p. motor operates on either D.C. or A.C. current 60 cycles or less. Body is made of bronze and motor housing of aluminum alloy.

AB774 A new $\frac{3}{4}$ -S Smith tilter mixer, "Champion of small mixers," is featured in a new 8-page catalog from The T. L. Smith Co., 2835 N. 32nd St., Milwaukee. This is a pneumatic tired, 2-wheel trailer model powered by a $\frac{2}{3}$ h.p. enclosed crank case Stover gasoline engine. Although this is a half-bag-tilter mixer, it is equipped with a big $\frac{5}{2}$ cu. ft. batch hopper which enables you to get another batch ready while previous batch is being mixed and discharged.

AB775 "Hobart Simplified Arc Welding with Multi-Range Dual Control" is the title of a deluxe 36-page brochure from Hobart Brothers Co., Troy, O., manufacturers of arc welding equipment. In these days of rush building operations builders are taking increasing interest in welded construction. This new Hobart book is timely and satisfying.

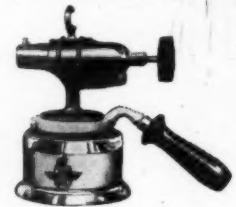
AB776 "Walker-Turner Machine Tools" is a new 56-page catalog from Walker-Turner Co., Inc., Plainfield, N.J. It is profusely illustrated and explains in detail a standard line of metal working and woodworking machine tools made by this company. A number of entirely new machine tools developed entirely for the defense industry are shown.

AB777 A new bulletin has been issued by the Ransome Concrete Machinery Co., Dunellen, N. J., on its line of 14-S concrete mixers. This is an 8-page, 2-color bulletin with large illustrations and complete details.

AB778 "Safe Use of Wire Rope" is a vestpocket handbook of 24 pages prepared by the Hazard Wire Rope Div., American Chain & Cable Co., Inc., Wilkes-Barre, Pa. This booklet gives tables of breaking strengths for all commonly used rope constructions, together with safety factors for principal rope applications.

AB779 "Therm-O-Tile steam conduit systems" are illustrated and described in a new 8-page, 2-color data sheet from H. W. Porter & Co., Inc., Newark, N. J. Therm-O-Tile is a complete conduit system for permanent protection, support and insulation of the underground mains of a central heating plant. Complete details are presented in this new publication.

AB780 The National safety blow torch which uses no pump and thus eliminates the most frequent cause of trouble and accidents with blow torches has been perfected by Davis & Murphy, 500 N. Dearborn St., Chicago. Pressure is originally obtained by the ex-



PUMPLESS safety gasoline blow torch.

pansion and vaporization of the gasoline in the supply tank through heat transmitted to it via a metal stay bolt welded to the top and bottom of the tank. It holds its pressure by continually transmitting a part of the heat from the burner after the torch is lit, until the entire supply is exhausted. Having no oxygen introduced into the tank, it keeps the fuel line free of oxidation.

AB781 "Effective Water Stoppage" is a very helpful, 16-page data sheet on Volclay, a product of American Colloid Co., 363 W. Superior St., Chicago. It illustrates what Volclay is, and shows how it works to waterproof earth reservoirs, dams, lakes, porous concrete tanks and reservoirs and for general grouting, crack-filling and waterproofing use.

AB782 "Paint Progress," a helpful little magazine brought out from time to time by The New Jersey Zinc Co., 160 Front St., New York City, presents some very timely information in its quarterly issue, Volume 2, Number 3. Traffic stripes on pavements and dairy barn painting are two of these articles.

AB783 "How to Make Basements Dry and Beautiful" is an illustrated, 8-page how-to-do-it reference book prepared by Medusa Portland Cement Co., Midland Bldg., Cleveland, O. If you are responsible for a damp basement and want to know how to correct it and how to avoid leaks and dampness from now on, you will want to study the pointers given in this very practical discussion.

CLIP AND MAIL TO CHICAGO

Reader Service Department (Nov., 1941)

American Builder,
105 W. Adams St., Chicago, Ill.

Please send me additional information on the following product items, or the catalogs, listed in this department:

Numbers.....

Name.....

Street.....

City..... State.....

OCCUPATION*.....

*Please note that occupation must be stated if full service is to be given

BUILDERS FIND G-E HEATING PUTS MORE 'SELL' IN CELLARS

Here you see a number of ads typical of hundreds run by builders in their local newspapers. One of these advertisers sold 28 of his G-E furnace equipped houses within the first four weeks; another built 26 houses last year, plans to sell another 26 this year; another sold 200 and is planning 1300 more.



This sign means business!

By all means get complete details on how the G-E Builder's Plan can help you sell more houses more easily! There's General Electric equipment ideally suited to your needs, whether you want radiator or warm air heat, oil or gas fired. And prices lower than ever before. Send the coupon today.

GENERAL ELECTRIC

The collage consists of numerous small advertisements from various local newspapers. Each ad typically features a house illustration, a price tag (e.g., \$490, \$4890, \$7425, \$4575), and text highlighting the inclusion of a General Electric furnace. Some ads also mention other features like 'CASH', 'SETTLEMENT CHARGES', and 'NEW HOME'. The ads are scattered across the page, creating a sense of widespread adoption of the G-E furnace by local builders.

TO SELL MORE HOUSES

TURN TO



GENERAL ELECTRIC CO.
Div. 611, Bloomfield, N. J.

Of course I want to know what's behind this successful house-selling Builder's Plan. Send me the facts right away.

Name _____
Address _____
City _____ State _____



HOTSTREAM

offers you a **Defense** **against Lost Sales** with the **New Gas-Fired** **PORCELAIN ENAMEL** **Automatic WATER HEATER**

It's tough to get enough galvanized and non-ferrous tanks to take care of all your needs. So, to provide you with units for your immediate requirements, we have developed the new Model "A" gas-fired automatic heater with porcelain enameled (glass-lined) tank, offering many outstanding features.



CLEAN AS GLASS. No dirt, no corrosion, no leaks, no discolored water.



TANK GUARANTEED 20 YEARS. Armco Ingot Iron Tank, heavily porcelain-enameled inside and out. New fusion-weld process with built-in spuds. No gaskets used.



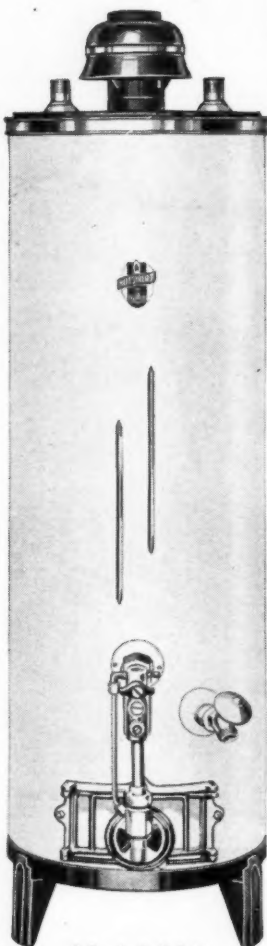
ECONOMICAL — DEPENDABLE. Heavily insulated...most efficient type burners...trouble-free automatic operation.



FIVE SIZES. 15, 20, 30, 40, 60 gallon capacities with inputs ranging from 10,000 to 40,000 B. T. U.



APPROVED by A. G. A. and government agencies F. H. A., U. S. H. A., P. B. A., and War Department.



Model "A"

THE HOTSTREAM HEATER COMPANY
8007 GRAND AVENUE • CLEVELAND, OHIO

ON & OFF the RECORD

Views and Comments

by *Structor*

BAN OR BUNGLER?—SPAB's announcement of October 9 (SPA-9) of its construction policy was widely headlined by newspapers as a "ban" on all construction except defense and projects essential to public welfare. That may be what it will ultimately become, but there was certainly nothing in the official announcement that said that. I have reread this announcement carefully and can find nothing to indicate that builders in nondefense areas who have materials or can get them without priority assistance are prohibited from building. This may come later, but I see no "ban" in this announcement.

It looks to me as though SPAB purposely worded the announcement to make the headlines. It looks as though they wanted to scare off as much construction as possible and, principally, they wanted to kill off large public works, post offices and "pork-barrel" projects.

The announcement said that state and local agencies would be asked to refrain from issuing permits on which priorities assistance would have to be denied. What about the vast number of jobs that go ahead in suburban and rural areas where no permits are required?

It may be that this SPAB construction announcement is merely the first step to choke off all construction and that eventually every kind of job will have to obtain a priority order before being allowed to start. It's a gloomy prospect, and such a thing would lead to the utmost confusion. Still, anyone who has made the rounds of Washington bureaus, as I have, cannot help but come away with the feeling that confusion is the order of the day. And Washington is undoubtedly in the saddle.

DO THEY KNOW?—I wonder whether OPM men know what a complex problem they are tackling in construction and housing? They appear to think of this industry in terms of a few large firms or a few large industrial areas, whereas actually the industry operates through hundreds of thousands of small firms, small subcontractors and small material producers. As *American Builder* showed in its October issue, there are more than 90,000 retail firms involved, and more than 30,000 manufacturing establishments. Also, 215,000 builders, contractors and subcontracting firms, as revealed in the new 1939 Construction Census.

Improvements, repairs, additions and small construction jobs of a thousand varieties are carried on in countless localities, by no means confined to large cities. It would seem wholly unnecessary to put these people out of business when they have ample materials and ample labor to function without in any way interfering with the national defense effort.

OPM's concept of the home building industry may be indicated by the appointment of a New York architect, Sullivan W. Jones, as Chief of Housing Priorities. Good man though he doubtless is, his experience with big city hospitals and public buildings is hardly the ideal background for an understanding of private small home building.

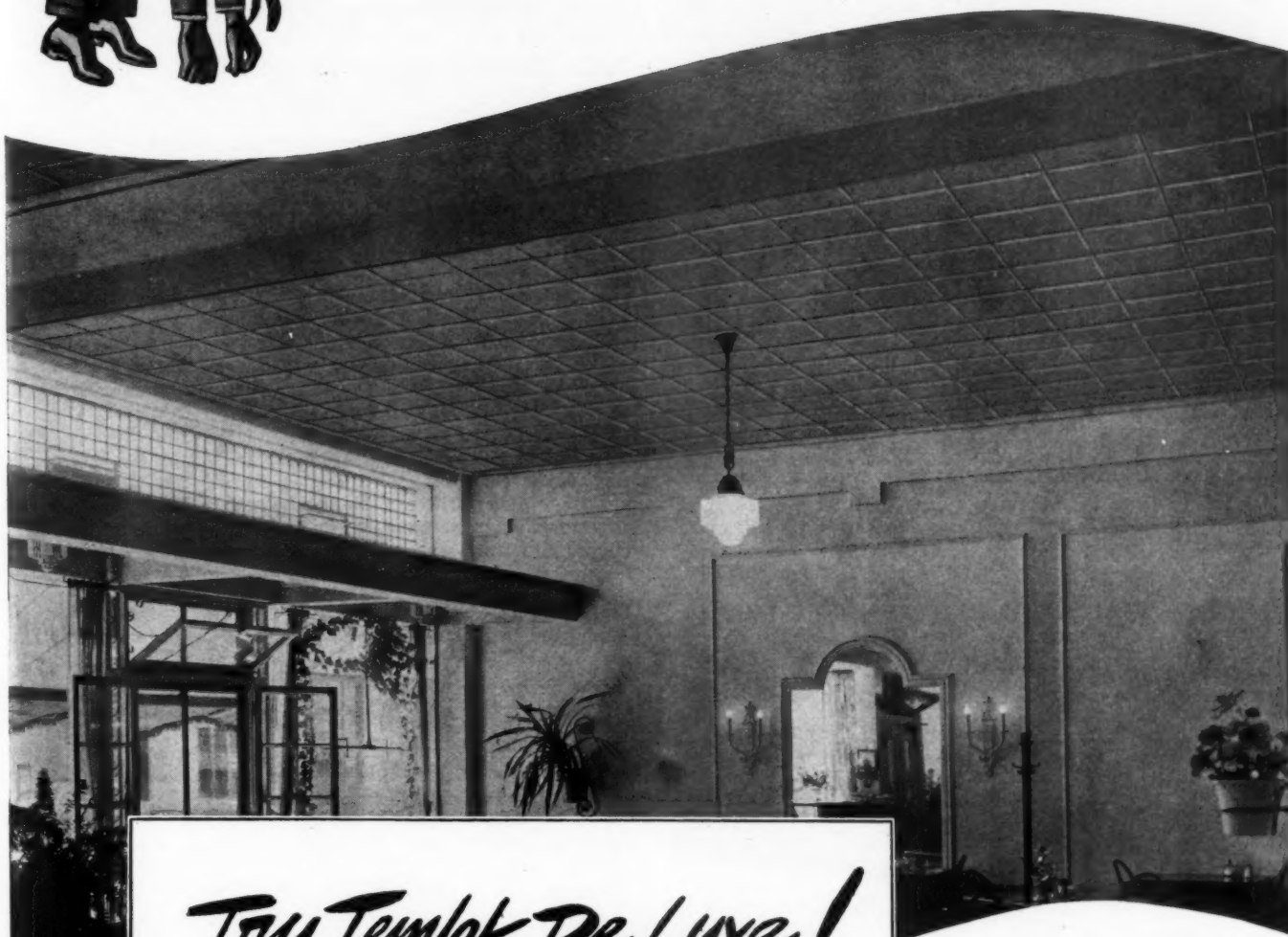
HOUSING SHAKEUP?—Rumor has it that the various housing agencies in Washington are in for a shakeup, and the Lord knows they need it. If there ever was a case of wheels within wheels, this is it—probably the most complicated set of overlapping bureaus in complicated bureaucratic Washington.

F. D. R. is said to have requested his old friend, Judge Sam Rosenman, to work out a plan to eliminate duplication and confusion. If he is able to work out this problem he should be awarded the title of "man of the year." He did what appears to be a good job in reorganizing OPM, which resulted in putting the capable Donald Nelson in charge. But in housing he has an even more confusing setup with FHA, HOLC, FWA, USHA, FSA, PBA inextricably involved, not to mention SPAB, OEM, OPM and the Army and the Navy!

Just in case Judge Rosenman should read this before he makes
(Continued to page 80)



Stuck on a ceiling job?



Try Temlok De Luxe!

EFFECTIVE INSULATION provided by the attractive cream Temlok De Luxe ceiling helps keep customers comfortable in the Pasadena Cafeteria, Pasadena, Calif. Unwanted noise is reduced, too, thanks to Temlok's sound-absorbing quality.

WHEN you're at a loss for just the *right* ceiling material—one that will offer clients something new and different—yet, at the same time, something practical and economical . . . try Temlok De Luxe! Clients will quickly approve your choice because this factory-colored interior finish does *several* important jobs at *one* reasonable cost!

Armstrong's Temlok De Luxe insulates effectively—saves fuel and increases comfort. It is *highly decorative*, too . . . comes in attractive, fast colors, and in panels, planks, and boards. In addition, Temlok has *high light-reflection* value and desirable *noise-quieting* qualities.

Furthermore, you save time and

money on the job by installing Temlok De Luxe. In new construction, it replaces plaster and paint, and is quickly erected with either adhesives or the new Tem-Clips. There's no waiting for plaster to dry. In remodeling, Temlok can be installed over old plaster walls and ceilings with a minimum of delay.

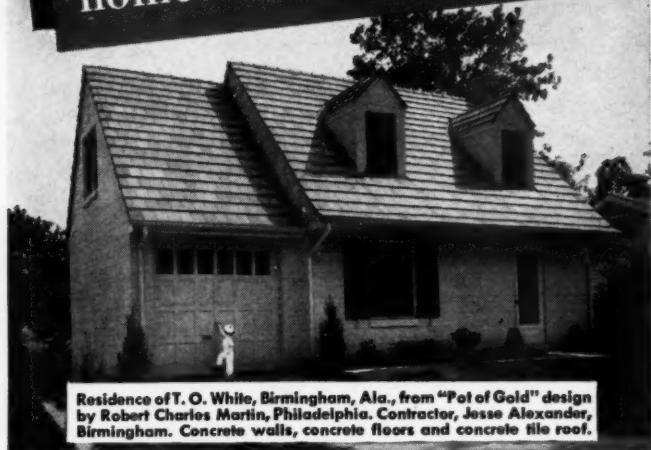
Why not plan now to put all these client-pleasing, time-saving features in your next interior? See "Sweet's" for full facts, or write now for a sample and complete information to Armstrong Cork Company, Building Materials Division, 979 Concord St., Lancaster, Pennsylvania.



ARMSTRONG'S TEMLOK INSULATION

De Luxe Interior Finishes • Lath • Sheathing • Hardboards • Monowall

for "defense" homes, homes
for men in service, low
rental homes and private
homes everywhere . . .



Residence of T. O. White, Birmingham, Ala., from "Pet of Gold" design by Robert Charles Martin, Philadelphia. Contractor, Jesse Alexander, Birmingham. Concrete walls, concrete floors and concrete tile roof.

CONCRETE offers:

True "low-cost housing"
Speedy construction
Good appearance
Lifetime comfort

At very little more first cost than for temporary construction, you can quickly erect comfortable, attractive, lifetime homes of firesafe concrete. Concrete materials are easily available with minimum transportation. And trained concrete workmen are nearly everywhere available, too.

The low annual cost of concrete homes, their comfort and lasting good appearance, plus their high fire resistance, make them the superior investment for decades. Buyers will respect your judgment when you advocate concrete.

This year, build better, quicker, more beautifully with concrete. Write for booklet, "Suggested Designs for Small, Firesafe Concrete Homes," suitable for showing prospective owners; sent free in U. S. or Canada.

PORTLAND CEMENT ASSOCIATION

Dept. A11-3, 33 W. Grand Ave., Chicago, Ill.

A national organization to improve and extend the uses of concrete
. . . through scientific research and engineering field work

On & Off the Record (Continued from page 78)

up his mind, I want to put in a good word for the Federal Housing Administration and for Housing Co-ordinator Palmer. Both show an understanding and appreciation of the importance of private initiative and enterprise in getting the housing job done. I believe that FHA's record cannot be questioned: it is there for everyone to see, and the truth is that it is a record of remarkable achievement in getting a remarkable number of much needed small homes under way in this country without tapping the public Treasury. FHA gets things done, and it's in the black.

TAX COLLECTORS ON WHEELS—It will take a good many fast-moving tax collectors to catch up with some of the construction workers I know of who are in the big money right now. The \$100 to \$150 a week they are making will result in quite a "sock" next March when the income tax comes due. Most of those I know won't have it and, furthermore, will have moved several times before the tax bills are sent out. Looks as though the Income Tax Bureau will have to set up a mobile unit to encircle these boys.

BETTER GUESS RIGHT—One of the questions builders are asking, which the priorities experts haven't answered, is what will happen to a builder who gets priority assistance on a house which he estimates will cost \$6,000, only to find by the time he has completed it that he has miscalculated and that it ran to \$6,500? Such things do happen.

A builder who asked this question at a conference in New York got a reproving look from the OPM representative and was told to read his application carefully. He implied that in applying for priorities a builder was entering into a serious government contract and that he had better live up to it, or else. He did admit, however, that allowances would have to be made for mistakes "made in good faith."

THANKS TO CURRIER—P. J. Currier of Detroit gets a hand from this column for putting the spotlight on the building industry labor situation. The implication that his low bid on a Detroit housing project was refused because he employs C. I. O. labor and uses prefabrication methods got extensive publicity. Practically all the newspapers headlined the case, and it has focused attention on the fact that under present arrangements the A. F. L. building unions are attempting a virtual monopoly on Federal construction work. The fact that Currier's bid on 300 houses was \$431,000 lower than his nearest competitor really brought home the high cost of union monopoly. The average cost of Currier's houses was \$3,265 each, or \$1,300 per unit under the nearest bid.

Home builders in Detroit have had plenty of trouble over the attempts of the unions to bring about a closed shop. This the Builders' Association of Metropolitan Detroit, representing more than 500 home builders, has vigorously opposed.

BRIDGEPORT BUILDERS OPPOSE HOUSING—Private builders of Bridgeport, Conn., have been thoroughly up in arms about the huge government financed housing projects that have been foisted on their town and on surrounding suburban communities. Their opposition has been taken up by the local Chamber of Commerce and supported by their famous Socialist Mayor, Jasper McLevy. Still the government housing projects continue.

Finally, private builders, supported by material dealers and other local interests working through the Chamber of Commerce, arranged for a visit by a Congressional Committee to enable them to get a first-hand picture of the housing situation. I have no doubt what the Congressmen will decide after they see the fine small homes private builders are putting up in the Bridgeport area and then compare them with the huge barrack-like mass housing projects paid for by the government which the builders feel are ruining private enterprise.

This is a problem confronting many other communities, and the only answer to it is aggressive and vociferous action by local building interests through duly elected representatives.

PRIORITIES GUARANTEE?—The nub of the problem confronting most private builders is, will they be able to get materials even after they have obtained a priority project rating? Philadelphia builders have asked for a guarantee that they will, and the same question has been raised by many other builders.

After all, when a builder puts out a considerable volume of cold cash for land, utilities and improvements and still more cold cash for materials and labor for houses, he ought to have some assurance that he won't be tied up before completion by inability to get certain essential products. The only alternative to this is the purchase and delivery of every item needed on a group of houses before work starts, and that is, putting it mildly, not an easy thing to arrange.

SPECIAL VARIATION—Some 700 builders from Long Island and New Jersey attended a priorities conference called by the New York Journal-American—one of the largest assemblies of active home builders I have ever seen. Of course, I have read reports about bigger builder meetings, but actually you won't find 700 real builders in one meeting oftener than once in a very blue moon.

Interest in home building priorities was so keen and the questions so extensive that the government representatives were kept a long time. In addition to New York and New Jersey FHA officials, the meeting was addressed by John D. Pollock, OPM priorities district manager; Donald Vanneman, local priorities examiner; Frank A. Vanderlip, Jr., regional housing co-ordinator.

All of the government men had one principal theme: it is their job to help private builders get more homes built—more than they have ever built before. One of the interesting items developed was that a builder who has a development under way of houses somewhat over \$6,000 may apply for a special variation "due to undue hardship." The case of a California builder who had spent \$150,000 in utilities and improvements on a 600-house project that was slightly over \$6,000 was stated. This builder, it was agreed, was entitled to special relief and he was granted priority assistance on 300 houses.

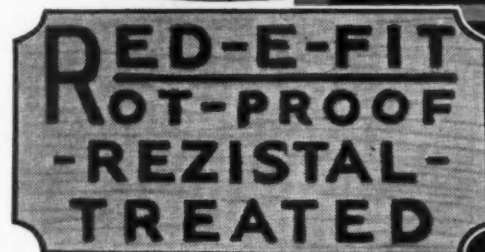
MODERNIZING GETS BREAKS—Through all the conversation and headlines about priorities one fact is outstanding—modernizing repairs and improvements get the breaks everywhere. No restrictions whatever have been placed on this type of work, and in fact priorities assistance of the A-2 type is promised to facilitate it.

OPM officials have announced that they will shortly put into effect a new priority system for this type of work, operating through the retailer of materials or equipment in defense areas. The retailer will be supplied with customers' certificates to be attached to his sales slip. A buyer who wants a kitchen sink or a few feet of pipe and a brass trap will buy from his usual sources and will sign this certificate affirming that the material is going to be used to provide an additional room or an additional apartment in such and such a house. The retailer can use this certificate to replace the supplies he sells, and they will feed back eventually through the wholesalers and distributing houses, to the manufacturers, who will then use them as a basis for an A-2 preference order in obtaining raw materials.

ARCHITECTS AS MASTER BUILDERS?—I enjoy reading the learned remarks made every now and then by luminaries of the American Institute of Architects. Recently Fred G. Frost, who as chairman of the "Committee on the Architect and Society," has been weighted down with a heavy responsibility, delivered himself of some remarks concerning the architect's place in building.

"Architects must assume added responsibility," he says, so that they may then "be recognized as the head of a building operation, or the 'master builder'." He admits that at present most architects are lacking in knowledge of mechanical apparatus, heating, ventilating, financing, building methods, labor problems and a few other things. He feels that if they will just apply themselves to these subjects, however, owners will come to depend solely on them, and architects will then be able "to lead the entire building operation and have the recognition such service deserves."

Such ambitions for the architectural profession are, no doubt, laudable; but I suspect that before architects become successful "master builders," they will have to make some drastic changes in their education, personality and ability to get things done in the practical, hard-hitting building world of today. In my opinion, the role of the architect today is that of one cog, although an important cog, in the efficient organization of a master builder. And the industry fortunately does not have to look ahead to some distant date for master builders. We have them on the job and functioning efficiently and well right now.



**SPECIFY
THE GENUINE
MADE BY**

HUTTIG of Muscatine

**GUARANTEED FOR 25 YEARS
AGAINST ROT AND DECAY**

These Long Life Windows will outlive Long Term Loans. The special HUTTIG treatment (identified by brand shown above) prevents absorption of excessive moisture. Protects against wet weather and high humidity. Prevents excessive swelling that causes "sticking" windows. Eliminates undue shrinkage and expansion. Prevents blue stain or black mould from developing. Protects against all types of decay, and termites. Painting cost is reduced because the special HUTTIG treatment serves as a preliminary priming coat and gives full protection until regular paint coats are applied. You can identify these windows by the above trade mark electrically branded on each sash.

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Get a FREE copy of "OPEN HOUSE." This 32-page book will help you sell homes with Ponderosa Pine Woodwork.

HUTTIG MFG. COMPANY
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Routs These Two ROTTERS



WOOD OF ALL KINDS . . . millwork, sash, doors, floors, siding, trim, plywood, etc. . . . needs protection against Moisture and Decay.

Now Laux REZ offers scientific, low cost insurance against these twin destroyers . . . and the rotting, swelling, stain, grain raise, loss of dimension, weathering, and wear that come in their wake. This clear synthetic resin sealer, product of research chemistry, penetrates into the wood cells, seals out the moisture, AND its potent toxic content prevents fungus growth and decay.

Millions of gallons of REZ have been applied for this double protection in woodworking plant and on the job. Applied by brush, saturated rag, spray or dip treatment, Laux REZ dries quickly, provides a perfect base for paint or stain.

Paint, hardware, or lumber dealers can supply REZ or write to your nearest Laucks office for complete information.



**Don't Forget...
Rustproofing for Metal
REZ for Wood!**

REZITING—Industrial Wood Treatment

FREE to manufacturers of sash, doors, plywood, and other wood products . . . a descriptive brochure of Laucks complete series of low-cost wood treatments for plant application . . . among them water-repellent, toxic preservatives that meet requirements of National Door Manufacturers Association and Western Pine Association. Write today to your nearest Laucks office.

I. F. LAUCKS, Inc.

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Defense Housing Priorities— Interpretations of OPM Critical List

AS EXPLAINED in the October *American Builder* (page 57), the Office of Production Management at Washington has set up a Critical List of building materials and equipment on which it will give priority assistance, where needed, for defense housing projects. This Critical List was published in full, starting on page 59 of the October issue. Following, for the information of our readers, are the first official interpretations that have been issued in respect to this Defense Housing Critical List:

DEFENSE HOUSING CRITICAL LIST Interpretation No. 1—September 24, 1941

General Interpretations

1. **Extension of Priority Orders.**—A preference rating granted under a priority order issued to the applicant may be extended to the applicant's suppliers and re-extended to their suppliers in the manner specified in the priority order.

2. **Shelf Goods.**—In some instances, pending changes in manufacturing methods, the materials specified in the Defense Housing Critical List are not stocked as existing shelf goods of distributors or manufacturers. In such cases, a builder should attempt to secure substitutes without priority assistance. A substitute is a material which does not appear on the Defense Housing Critical List, but which serves the same purpose as an item on the List. If not available without priority aid, substitutes are eligible for priority assistance under the following conditions:

a. The applicant may secure priority aid for a substitute and the priority order which covers a substitute may be extended to the applicant's source of supply and to his subcontractor who installs the material or equipment in the building and to the subcontractor's suppliers.

b. The supplier—a distributor or manufacturer—is authorized to furnish a substitute covered by a priority order only in the event he cannot meet the required delivery dates with the material on the Critical List for which the substitution is being made.

c. The distributor, to secure replacement of a substitute furnished from his current stock, has two possibilities in re-extending the applicant's priority order: (1) He shall order the material on the Critical List for which the substitution was made provided his required delivery date can be met by his normal source of supply. (2) If this is not possible, he may order a substitute which can be furnished to meet the required delivery date provided the substitute is stocked as shelf goods as of the date of this Interpretation or provided the substitute will have been processed to completion as an item of manufacturer's shelf goods within a period of not to exceed 30 days from the date of this Interpretation.

d. The manufacturer, to secure replacement of a substitute by re-extension of the applicant's priority order, shall be limited to the materials which are necessary to manufacture an item of the kind and quality specified in the Critical List.

(For example, plumbing fixture fittings and trimmings are limited under the List to ferrous metal, yellow brass and zinc die castings with plating of flashed copper and nickel or unplated. Such materials are generally not now stocked as shelf goods of distributors or manufacturers. Most stocks at present consist of yellow brass, with plating of chrome over nickel plating. The applicant, if he finds that the chrome plated material is not available without priority assistance, may include the chrome plated substitute in his application together with a statement identifying the material on the Critical List for which the substitution is being made. If the applicant is the builder he may treat the substitute in like fashion when extending his priority order to the plumbing subcontractor. A similar treatment shall be given to extension of the priority order to the plumbing jobber. However, the jobber of plumbing fixtures in extending the priority to his supplier—a manufacturer—may secure replacements of chromium plated material only if his supplier cannot meet required delivery dates with the material for which the substitution was made and then only to the extent that he can be supplied from shelf goods existing as manufacturer's stock prior to or within 30 days from the date of this Interpretation. When such shelf goods are depleted, the jobber's replacement under re-extension of the priority order must be made of one of the materials specified in the Critical List. Moreover, from the date of this Interpretation, a manufacturer in re-extending the priority to his suppliers shall be limited to the materials necessary to produce fixture fittings and trimmings of the type specified in the List.)

The above principles shall also apply where the extension or re-extension of the applicant's priority order is used by a supplier to qualify under a warehousing plan or under the Defense Supplies Rating Plan.

3. **Applicable Code or Regulations.**—As used hereinafter, the phrase "applicable code or regulation" means a code or regulation of a public body having jurisdiction, or a regulation or standard of a housing agency of the Federal Government constructing or aiding the financing of the project.

4. **Multi-family Dwellings.**—The term "multi-family dwellings" means a dwelling containing separate living units for three or more families with joint facilities or services or both. For the purpose of the Defense Housing Critical List, the term "joint facilities" means any one or more of the following which serve three or more families: Entrance hall, stairway, heating plant, hot water generator, storage or laundry facilities, bathrooms, or toilets, and attics; the term "joint services" means janitorial and maintenance services.

5. **Limitations on Brass.**—The phrase "brass limited to minimum necessary" applies only to manufacturers. This phrase appears in Plumbing, Items 3.c. and 4.b.; in Heating and Ventilating, Item 1.a.; and in Land Development Items 3.b. and 3.c. (Refer to General Interpretation No. 2 on Shelf Goods.)

6. **Local Conditions.**—The phrases "where local conditions make necessary" or "where local conditions require" means where required by applicable code or regulation and where the use of a substitute would violate the applicable code or regulation.

Specific Interpretations

STEEL AND IRON

"2.c. Anchors, bolts, tie rods, dowels and cleats." Reword to read "2.c. Anchors, bolts, tie rods, dowels, cleats and timber connectors."

"2.d. Angle lintels—over openings in veneer masonry walls only." The term "veneer masonry walls" means all parts of exterior walls in structures constructed of masonry veneer over wood framing.

3. Steel stairs, rails, etc.—only for multi-family dwellings where necessary for fire hazard protection. . . . The phrase "where necessary for fire hazard protection" means where required by applicable code or regulation. In other words, steel stairs, rails, etc., are not eligible for priority aid unless their elimination would constitute a violation of an applicable code or regulation pertaining to fire hazards.

6.d. Termite shields for infested areas only." Continuous termite shields on top of foundation walls and piers are eligible only in Florida, Alabama, Mississippi, Louisiana, and Texas.

The extension of flashing to provide a termite shield where masonry terrace, platform or porch slabs and steps abut wood construction at exterior walls is eligible in the following areas:

| | | |
|-------------|----------------------|----------------|
| Alabama | Kentucky | North Carolina |
| Arkansas | Louisiana | Ohio |
| California | Maryland | Oklahoma |
| Connecticut | Massachusetts | Pennsylvania |
| Florida | Michigan | South Carolina |
| Georgia | Mississippi | Tennessee |
| Illinois | Missouri | Texas |
| Indiana | New Jersey | Virginia |
| Kansas | New York | West Virginia |
| | District of Columbia | |

"7. Lath—to include only:

a. Ferrous metal, paint dipped. Limited to fire-resisting partitions, ceilings and soffits, and to wall tile bed base, and where gypsum lath and gypsum plaster is not permitted." Only such partitions, ceilings and soffits as are required to be fire-resisting by applicable code or regulation are to be deemed "fire-resisting." Metal lath is not eligible for "fire-resisting" surfaces where non-metallic materials will meet the requirements of the applicable code or regulation.

"7.b. Corner beads for vertical corners only, paint dipped ferrous metal generally, zinc coated only where exposed to moisture or extreme conditions of humidity." The phrase "where exposed to moisture or extreme conditions of humidity" means in kitchens and bathrooms.

"7.c. Exterior stucco base, woven or welded fabric, non-metallic, coated: zinc coated before fabrication, optional in California coastal district only." The term "California coastal district" means the State of California except that part of the state north of the San Francisco Bay localities.

"8. Builders and Cabinet Hardware—with parts of steel or iron only except necessary bushings and pin tumbler assemblies of brass or bronze and optionally, latch bolts, dead bolts, and stop buttons in exterior lock assemblies of brass or bronze; knobs, push plates, drawer and other pulls of glass or other non-metallic material." Exterior door knobs of steel or iron finished as specified in Item 8 are eligible for priority aid although non-metallic material is preferred. Push plates, drawer and other pulls are not eligible for priority aid as these items may be of glass or other non-metallic material.

"8.a. Nails, screws, bolts, nuts and washers, ferrous metal generally uncoated; zinc coated, optional, for roof coverings and wall ties only. Delete "zinc coated, optional for roof coverings and wall ties only" and add "zinc coated nails, optional for roof coverings, exterior sheet metal work and wall ties only."

"NOTE: Hardware used exteriorly under extreme exposure conditions—as in salt air, zinc coated in lieu of as above listed." The phrase "under extreme exposure conditions" is to be interpreted in each case by the field offices processing the application provided that "extreme exposure conditions" shall not be deemed to exist in areas more than 50 miles distant from bodies of salt water on the Eastern and Western Seaboard nor more than 100 miles inland from the Gulf of Mexico, nor more than 30 miles inland from any of the Great Lakes.

ELECTRICAL

"NOTE: Roughing in material limited to the recommendations of the electrical supplies industry. . . ." These limitations on roughing in material apply to manufacturing processes only. Manufacturers may obtain copies from the Office of Production Management.

"8. Conduit fittings, outlet boxes and wiring devices—number limited, see Note." Conduit fittings and wiring devices are limited to the quantities found necessary by the applicant to provide for the eligible number of outlets to be installed for switches, lighting fixtures, and convenience outlets. The number of such outlets for each dwelling unit that is eligible for priority aid shall not exceed the sum total for the dwelling unit calculated as follows:

- | | |
|--|--|
| a. Bathroom.—Two outlets. | i. Basement. — (1) In dwellings which do not contain a utility room.—Five outlets. (2) In dwellings which contain a utility room in addition to a basement.—Three outlets. |
| b. Kitchen.—Four outlets. | j. Garage—one car.—Two outlets. Two Car.—Three outlets. |
| c. Dining Room or Dining Space.—Three outlets. | Multi-family.—Two outlets for each enclosed car stall. |
| d. Living Room.—Four outlets. | k. Other Areas.—Number as determined for the individual case by the office processing the application. |
| e. Each Other Habitable Room.—Four outlets. | l. Special Purpose Outlets for ranges, refrigerators and for heating, ventilating, and plumbing appliances and equipment.—Number as determined for the individual case by the office processing the application. |
| f. Each Hall.—Two outlets. | |
| g. Each Exterior Entrance.—Two outlets. | |
| h. Utility Room.—Three outlets. | |

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City..... State.....

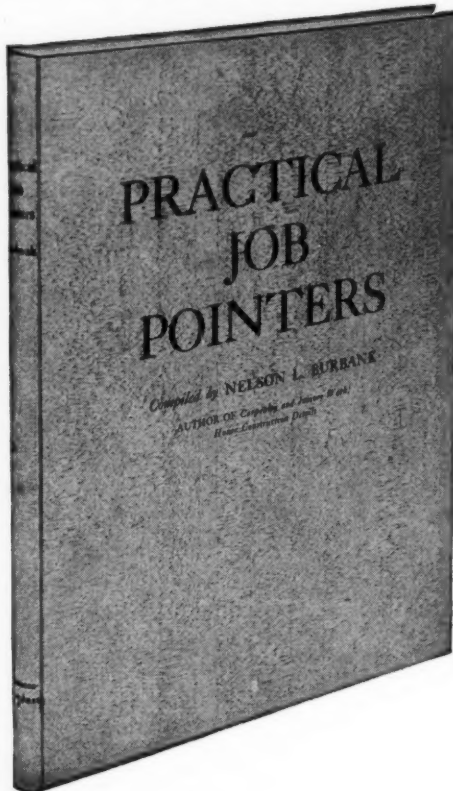
(Continued to page 84)

New Edition . . .

PRACTICAL JOB POINTERS

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Author of "CARPENTRY AND JOINERY WORK";
"HOUSE CONSTRUCTION DETAILS"



A collection of job pointers, kinks, short cuts and "tricks of the trade" which have appeared in the *Job Pointers* section of *American Builder and Building Age* during the past decade, illustrated with drawing, collated and indexed for ready reference. There are some 600 of these improved methods as compared with 369 in the first edition. The format has been enlarged to 9 x 12 inches and a hard cloth binding used in place of paper. This necessitated raising the price but almost any job pointer found to be an improvement over present methods will save enough in time and satisfaction to more than pay the cost of the book.

Contents

Use and Care of Tools—Workbenches and Attachments—Portable Equipment—Excavations; Foundations; Forms—Sills; Girders; Joists; Sub-Flooring—Exterior Wall Construction; Inside Wall Framing—Exterior Wall Covering—Roof Construction; Bay Construction; Roofing—Cornices and Porches—Interior Wall Covering; Interior Trim—Steps; Stair Construction—Windows—Doors—Closets; Shelves; Built-in Equipment—Finished Flooring—Painting; Finishing—Screen Repairing; Screens—Sanitary Equipment—Electrical Wiring—Scaffolds; Ladders; Hoists—Garage Doors—Short Cuts in Laying Out Work.

130 pages, 600 illus., 9 x 12, cloth, \$2.00

Book Department

AMERICAN BUILDER and BUILDING AGE

38 Church Street

New York, N. Y.

Priorities—

(Continued from page 83)

Note: The following items each count as one outlet: switch box—combination switch and convenience outlet—duplex convenience outlet—outlet for permanently installed fixtures—special purpose outlet.

PLUMBING

Plumbing Installation Limitations for One- and Two-Family Dwelling Structures

1. Each dwelling unit consisting of two bedrooms or less is eligible for the installation of not to exceed the following fixtures: one single or double laundry tray; one single or double compartment kitchen sink; one tub with or without shower fittings over tub, or fittings for a non-metallic shower stall; two water closets; and one lavatory.

2. Each dwelling unit consisting of three or more finished bedrooms or consisting of two bedrooms plus sufficient unfinished space to provide for one or more additional bedrooms is eligible for the fixtures specified in Item 1 above plus the roughing-in for one additional lavatory, water closet and tub or shower stall, provided such roughing-in is serviced by the same soil stack and water supply risers as are necessary for the initial bathroom installation.

3. In two story dwellings, eligible materials are limited to plumbing installations incident to not more than one soil stack per dwelling unit.

4. In one story dwellings where the room layout prevents the use of one soil stack per dwelling unit to service the fixtures in the kitchen, laundry and initial bath, eligible materials may include one additional 1½" waste and necessary vent and water supply piping for the kitchen or laundry fixtures.

Note: Exceptions to Plumbing Limitations 3 and 4 will be granted upon the applicant's request provided he certifies, with respect to each dwelling unit for which an exception is sought, that the plumbing contract has been awarded and construction has started as of the date of this Interpretation, or that the plumbing contract has been awarded as of the date of this Interpretation and construction will start within 60 days from the date of this Interpretation. The request and certification may be made by an appropriate notation by the applicant on the list of material which is attached to and made a part of the application.

"1. Cast or stamped ferrous metal, enameled and vitreous ware plumbing fixtures, the latter wherever practicable." The phrase "wherever practicable" means wherever practicable in the opinion of the applicant.

"3.b. Galvanized steel pipe, wrought iron pipe and malleable fittings generally non-metallic coated." Priority shall not be granted for metallic coated wrought iron piping or metallic coated malleable fittings, except where required by applicable code or regulation.

"4.a. Galvanized steel or wrought iron pipe and malleable fittings, or cement lined cast iron pipe and fittings—lead wherever practicable, inside buildings only." Replace the term "cast iron" with the term "ferrous." The term "wherever practicable" means wherever practicable in the opinion of the applicant provided the use of lead is not prohibited by applicable code or regulation. The phrase "inside buildings only" includes the service connections to the Land Development water distribution system only to the extent that such connections are included in the contract for constructing the individual dwelling unit and provided the length of the connections does not exceed 100 feet. In other cases, service connections are to be listed under the Land Development group.

"5. Water Heaters (storage type) and Hot Water Storage Tanks,—made only of:

a. Galvanized sheet—only where local conditions necessitate." The phrase "where local conditions necessitate" means wherever black steel water supply piping is not permitted under applicable code or regulation.

Electric water heaters of the storage type may include immersion units and other necessary parts.

HEATING AND VENTILATING

"1. Boilers—Furnaces only for items noted below: Rerod to read "1 Boilers and Furnaces—only for items noted below."

"1.c. Breechings—ferrous metal non-metallic coated." Uncoated breechings are also eligible. Breechings for multi-family heating systems may include necessary clean-out doors.

"1.d. Floor furnaces, space heaters, stoves and other similar heating devices, wherever practicable and where they may replace the above." As used here, the phrase "wherever practicable" means wherever practicable in the opinion of the applicant. However, it shall not be deemed practicable to use the above types of "overflow" heaters where such heaters are not acceptable under applicable code or regulation.

"1.e. Vents for heating equipment in demountable houses— . . ." Vents may include necessary casings, supports and connections. The phrase "demountable houses" may include all prefabricated structural enclosures for dwelling purposes.

3.c. Valves

Ferrous metal wherever practicable, yellow brass elsewhere, no plating." As used here, the phrase "wherever practicable" applies to manufacturers only. (Refer to General Interpretation No. 2 on Shelf Goods)

"4.d. Registers and Grilles

(2) Fabricated steel optional for large units in floor." The term "large units" applies to supply registers for pipeless or floor furnaces and to systems using a single return grille.

"5. Firing Equipment

NOTE: Oil burners eliminated from eastern seaboard area." The term "oil burners" means all oil burning equipment for boilers, furnaces, floor furnaces, space heaters, stove and other similar heating devices. The term "eliminated" means only that priority aid is not available. The phrase "eastern seaboard area" means the entire territory of the following states and districts except as noted herein:

| | | |
|----------------------|--------------|--|
| Georgia | Maryland | Connecticut |
| South Carolina | Delaware | Massachusetts |
| North Carolina | New Jersey | Vermont |
| Virginia | Pennsylvania | New Hampshire |
| West Virginia | New York | Maine |
| District of Columbia | Rhode Island | Florida—East of the Appalachicola River |

HOUSEHOLD EQUIPMENT

"2. Incinerator hardware and fittings—ferrous metal, non-metallic coated, multi-family dwellings only. Incinerator proper, of non-metallic material only." The term "fittings" includes grates, steel angle lintels and other necessary ferrous items.

LAND DEVELOPMENT ITEMS

"3.a. Pipe and Fittings, ferrous metal; zinc coated pipe only in smaller sizes or where local conditions require." The term "smaller sizes" means pipe sizes of three inches and less and fittings for such pipe.

"5. Manholes—Ferrous metal covers and frames and step bars—for streets only." Replace the term "streets" with the term "public right-of-way."

DONALD N. NELSON,

Director of Priorities,

Office of Production Management.

* * *

Use of Copper Prohibited Except Electric Wiring

THE Division of Priorities at Washington imposed additional rigid controls on copper and brass on October 21, issuing Conservation Order M-9-c which virtually forbids the use of copper for many civilian products. In the most far-reaching action of its kind yet taken, the order sets up these controls over both domestic and imported metal and scrap:

1. Use of copper in more than a hundred civilian articles is restricted to approximately 60 per cent of a 1940 base period until January 1, 1942.

2. Use of copper in the manufacture of the articles listed is prohibited after January 1, 1942, except for non-decorative plating.

3. Use of copper in building construction is prohibited after November 1, 1941, except for conductors of electricity.

4. Use of copper in all items not listed is reduced to 70 per cent of a 1940 base period.

The prohibited list includes seven general categories: building supplies and hardware; house furnishings and equipment; dress accessories; jewelry, gifts and novelties; burial equipment; automotive, trailer and tractor equipment, and a miscellaneous

list which runs from fire-fighting apparatus to toys.

Seven exceptions are made. Restrictions do not apply to Army, Navy, Lend-Lease or other Government defense agency contracts where the use of copper is specified; to products covered by underwriter or other safety regulations in effect on October 1, 1941; to copper used as a conductor of electricity; in chemical plants where corrosive action makes other materials impractical; in research laboratories; for condenser or heating exchanger tubes and tube sheets in steam generating plants and oil refineries where corrosive action invalidates the use of other materials, and in hydro-electric plants.

* * *

Organized Home Builders Active

The October 17th "Members' Letter" of the Home Builders Institute of America, issued from Realtor headquarters at 22 W. Monroe St., Chicago, reports gratifying progress in organization work among professional home builders.

"The Home Builders Institute is rolling up a representative membership," this Letter reports. "Over 300 attended a home builders' meeting we held in Portland, Ore., on Monday of this week, and all were enthusiastic about HBI. Two weeks ago at the Wisconsin Convention in Madison, home builders were pleased with the work done on priorities and pledged 60 members from that state. In Denver recently home builders were called together by the Denver Real Estate Exchange to discuss the priority situation with your secretary and we expect a minimum of 40 HBI memberships. Similar pledges have been received from Real Estate Boards in a number of cities. HBI has at present 430 members actually enrolled with pledges for an additional 310, which will be made good within the next thirty days. When the Home Builders Institute reaches a membership of 1,000, it will be established as a truly representative organization for the entire home building industry throughout the nation, and its effectiveness in Washington and elsewhere will be immeasurably increased."



MAN, I SURE CLEANED UP ON THAT ONE!

I'm making big money sanding floors. The job I just finished gives me that satisfied feeling—I did good work for my customer—worth every cent of it—and there's plenty more jobs where that came from in my work record book—\$15.00—\$20.00—\$25.00 profit a day "aint hay"!

You can do the same—no experience required—no big business or selling deals to put over—just start out small if you like and get helpers later as demand for your services increases. That's what I'm doing and you should, too. Get that good old feeling of independence by being in something for yourself.

Send in the coupon below to American today for details on this money-making plan—no cost or obligation.



Here's a picture of me and my new American Standard Eight Floor Sander.

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Send complete details and prices without cost.
☐ I want to go into floor surfacing business.
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The right sink helps you sell the house



• The kitchen is an important room to a woman. And the builder who has installed a well-styled sink of FORMED IRON, porcelain enameled in immaculate white or a pleasing pastel color, has a *strong selling point!*

• You can tell prospects that the high-luster porcelain enamel cleans as easily as glass, yet it is so hard that a knife cannot readily scratch it. And it is acid-resisting *at no extra cost.*

• When these modern fixtures are porcelain enameled on ARMCO Ingot Iron, you have something else to talk about. For twenty-seven years the good qualities of this "world's standard porcelain enameling iron" have been nationally advertised to millions of people.

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REVIEW of the NEWS

Statistics, Associations, Agencies

September Residential Volume Down Slightly from All Time High, But Still Ahead of Same Month Last Year

RESIDENTIAL construction for September, according to F. W. Dodge figures for 37 eastern states, amounted to \$175,713,000. This represents an increase of about \$23,000,000 over September, 1940, but is a decline from the previous month's record high for recent years.

Statistics for the four classes of construction are as follows:

| 37 Eastern States | Sept. 1941 | Sept. 1940 | Aug. 1941 |
|-----------------------|---------------|---------------|---------------|
| Residential | \$175,713,000 | \$152,372,000 | \$231,529,000 |
| Non-Residential | 218,288,000 | 101,295,000 | 286,741,000 |
| Public Works | 131,123,000 | 59,898,000 | 134,054,000 |
| Utilities | 98,168,000 | 34,086,000 | 107,909,000 |

Total\$623,292,000* \$347,651,000 \$760,233,000†

*September includes \$284,000,000 of defense construction.

†August includes \$399,600,000 of defense construction.

Operative Builders Quick to File for Priority Homes

WORD comes from FHA headquarters in Washington that during the first four weeks of "priority assistance" defense home building, 2,833 operative builder projects containing 88,571 single family home units have come in and have been processed by FHA. This, it is said, is a volume very similar to the comparable four weeks last year.

During the first week, 264 builders registered 25,604 family units, an average of 97 each; during the second week, 611 builders and 26,000 units, an average of 42 each; during the third week, 1,095 builders and 19,369 units, an average of 18 each; and during the fourth week, 863 builders and 17,598 units, an average of 20 each.

From the above figures secured by *American Builder* it is evident that the larger operators were the first to get organized and apply for the priority assistance offered for defense housing. Then, the smaller operators began to come into the picture with their typical projects of 10 to 30 homes each.

Construction Industry Conference Called

WITH a seven and one-half billion dollar defense building program under way, leading construction industry representatives are laying plans to attend the fifth annual Construction Industry Conference in Washington, Nov. 6 and 7.

Held under the auspices of the Construction and Civic Development Department of the Chamber of Commerce of the United States, the conference will be addressed by top-ranking government defense officials, industrialists and labor representatives.

Central theme of the conference will be "Construction Faces Defense." The theme will provide a title for the initial address scheduled to be delivered by William H. Harrison, director, production division, Office of Production Management, at the morning session, Thursday, Nov. 6.

Other speakers at the morning session will include Thomas S. Holden, president, F. W. Dodge Corporation, New York, whose topic will be "Civilian and Defense Needs," and Kirk Fox, editor, *Successful Farming*, Des Moines, Iowa, who will discuss "Maintaining Our Farm Production Plant."

Ernest T. Trigg, president, National Paint, Varnish & Lacquer Association, chairman of the Conference Program Committee, will preside at the opening session.

The afternoon session of the same day will be devoted to the subject, "Economical Use of Critical Materials," which will be analyzed from the viewpoint of government by Dr. Hugh L. Dryden, chief, division of mechanics and sound, National

Bureau of Standards; from the viewpoint of design by a private architect and a private engineer, and from the viewpoint of the manufacturer. To be considered also at the afternoon session will be the timely issue of "Government Price Control," the topic of Peter A. Stone, price executive, lumber and building materials section, Office of Price Administration.

Presided over by E. P. Palmer, secretary-treasurer, Senior and Palmer, New York, and chairman, Construction and Civic Development Department Committee, an industry dinner will be held on the evening of the conference's opening day. Among the speakers at the dinner will be a leading industrialist and a representative of the building and construction trades department, American Federation of Labor.

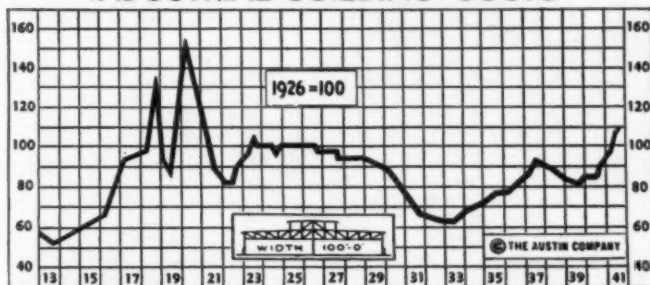
The concluding session of the conference, to be held Friday morning, will be occupied principally with a panel discussion on "Allocations and Priorities." Under the chairmanship of V. P. Ahearn, executive secretary, National Sand & Gravel Association, Washington, D.C., the discussion will be opened with a statement by Donald M. Nelson, director of priorities, OPM, and will feature as its participants Sullivan W. Jones, head of housing priorities, OPM; an outstanding speaker on repair maintenance and supply, and John H. Martin, director of training, priorities division of the OPM.

Industrial Building Costs Are Up

AT 110, the third quarter index of industrial building costs compiled by The Austin Company, engineers and builders, is up only one point over the previous quarter but shows an increase of 19 points or 20.8 per cent over the level at this time last year. This advance reflects the cumulative effects of higher unit costs for construction labor and of a continuing upward trend in building material prices, according to George A. Bryant, Austin president.

"While priorities are helping the builders of defense plants to get essential materials, one cannot overlook the fact that priorities do not apply to the labor market where competition is every bit as keen," Mr. Bryant explained. "It has been necessary to employ more and more inexperienced men and a decline in the average efficiency of field labor has been the inevitable result.

INDUSTRIAL BUILDING COSTS



"There has been a steady increase in the amount of overtime work in the centers of greatest activity and much of it commands a double time rate. Construction workers on projects being built for the Army, Navy and Maritime Commission are paid only time and a half for all their overtime work as a result of the agreement between building trades unions and the government, but there are a good many cases where workers on private jobs for vital defense industries still draw double time for everything over 40 hours. The index reflects a considerable volume of such work for companies whose commitments to the government demand that they get their new plants into 24-hour production as soon as possible.

"Field crews are working long hours, sometimes with night shifts, and seven days a week at some locations, to make the most of favorable weather and in an effort to offset the slow delivery of materials. In some cases, where materials that would normally be used are not available, costly substitutes offer the only means of finishing the work.

"The government may be obliged to further restrict non-defense building in order to conserve the limited supplies of materials and labor for essential defense work. Any projects that might be deferred for this reason would probably provide a welcome backlog for the whole construction industry when the urgent needs of the defense program have been met and employment in the building trades begins to taper off," Mr. Bryant added.



DEVOTION TO DUTY IS A TELEPHONE TRADITION

High morale, devotion to duty, ingenuity in meeting new circumstances and the ability and will to work with each other and with the public are traditional characteristics of telephone employees.

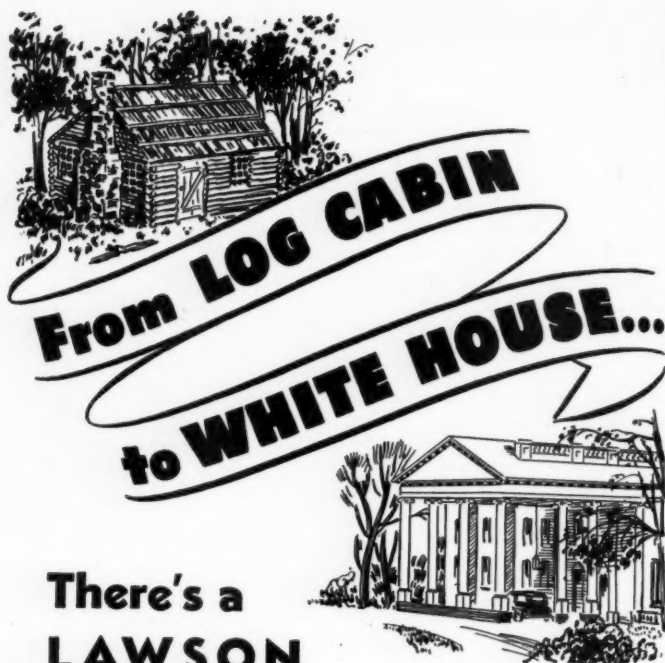
Times like these not only demand these characteristics, they serve to create and extend them.

Now, more than ever, the creed of telephone workers is expressed in these words—"We'll do our best to get your call through."

BELL TELEPHONE SYSTEM



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There's a LAWSON Cabinet For Every Type of Home You Build

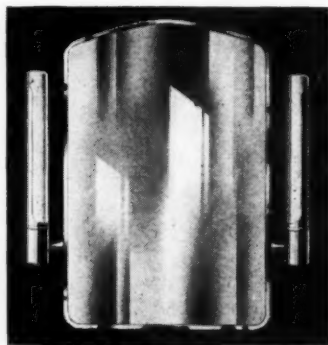
THERE is a Lawson bathroom cabinet priced to fit every budget, designed to harmonize with every decorative plan! For Lawson manufactures *three* complete lines of recess bathroom cabinets, plus a complete line of surface wall-type cabinets.

Again and again, builders have found that Lawson equipped homes are easier to sell. That's because a Lawson cabinet, whether it be one of the highest quality "Time Proof" Vitreous Porcelain-finished line, or one of the handsome "Standard" line for the budget home, or the popular Economy line for low-cost homes, so often catches the woman's eye and clinches the sale.

Lawson also offers a complete line of modern chromium plated accessories in all price ranges—backed, like Lawson cabinets, with the prestige of 125 years of quality.

For the Budget Home!

The Bostonian, one of the most popular cabinets in the Lawson "Standard" line of "Lustre-Lux" baked enamel cabinets. With or without side lights.



THE F. H. LAWSON CO.

Bathroom Cabinet Division
Cincinnati, Ohio

SOLD EXCLUSIVELY THROUGH WHOLESALE OUTLETS

Every Third House Needs Repairs

ALMOST one-third of America's homes are substandard, according to official Real Property Surveys conducted in 419 different localities during the past seven years by actual inspection of ten million dwellings. The Surveys are used by local housing authorities as a basis for determining the need for low-rent housing projects.

Surveys covering 234 places and nearly seven million dwellings during the same period disclosed that one in six of the houses needed major repairs or were unfit for use. Sixteen percent had no toilet; 22 percent lacked bathing facilities. Similar information is available on all 419 places surveyed but is not yet in comparable form for nation-wide compilation.

The following table presents compilations from the Real Property Surveys:

SELECTED HOUSING DATA FOR 419 PLACES

| | Number | Percent |
|--|-----------|---------|
| Total dwellings inspected..... | 9,949,586 | 100.0 |
| Dwellings in bad condition and/or lacking adequate plumbing..... | 2,875,430 | 28.9 |

SELECTED HOUSING DATA FOR 234 PLACES

| | Number | Percent |
|--|-----------|---------|
| Total dwellings inspected..... | 6,747,257 | 100.0 |
| Dwellings needing major repairs or unfit for use..... | 1,075,390 | 16.0 |
| Dwellings lacking private indoor bathing facilities..... | 1,476,018 | 22.0 |
| Dwellings lacking private indoor toilet..... | 1,084,766 | 16.1 |

Cannon to Head Loan League

THE NOMINATING committee of the United States Savings and Loan League, Chicago, has submitted the candidacy of Fernor S. Cannon, Indianapolis, for the presidential election to be held at the Miami convention of the League, December 1-5. The nominee is president of the \$30,800,000 fifty-four year old Railroadmen's Federal Savings and Loan Association in his home city.

Under a new system of choosing the candidates for its elective offices, the nominating committee of the national organization of the \$5,600,000,000 savings, building and loan business has sent to the 3,700 member institutions in all of the states and in Alaska and Hawaii a slate to be voted on at Miami. On the ticket with Mr. Cannon are Ralph H. Cake, Portland, Oregon, president of the Equitable Savings and Loan Association, as candidate for first vice president; and John F. Scott, of St. Paul, Minnesota, president of the Minnesota Federal Savings and Loan Association as candidate for second vice president. The veteran secretary-treasurer of the League, H. F. Cellarius of Cincinnati, has also been nominated for his forty-sixth term in that office.

Home Characteristics Analyzed

FHA Scans 12,144 Homes Built in 1940;
Learns Size, Style and Equipment Trends

A DETAILED study of the design characteristics and of the types and quantities of materials entering into the construction of single-family detached houses has been undertaken by the Federal Housing Administration's Technical Division and its Division of Research and Statistics and is reported in the current issue of the FHA "Insured Mortgage Portfolio."

These estimates were derived from an analysis of a number of cost engineer case summaries from 43 of the Federal Housing Administration's field insuring offices. The sample covered 12,144 cases, or 7.3 per cent of all single-family detached homes on which construction was started during 1940 under the FHA program. The sample therefore is sufficiently large to be of significance in connection with current home building in general.

During 1940, approximately 75 per cent of the new small homes financed under the FHA program were valued at less than \$6,000, including land and all utilities.

Because the quantities of materials used depend upon the size of the house, the first problem in the FHA's study was to arrive at an average floor area of the typical FHA insured house. For this purpose, 11,423 cases in the sample which

provided information on size of houses were analyzed and the number of stories and average area for each story-height calculated. A further analysis of the size of house by location was made since it was felt that there is a distinction between the size of houses in northern cities in which central heating systems predominate and in southern cities where central heating systems are not commonly used.

This analysis established that the average floor area for all one-story dwellings studied was 1,009 square feet—936 square feet for one-story dwellings in northern cities and 1,144 square feet for similar dwellings in southern cities. For one-and-one-half story dwellings, the average floor area was 1,390 square feet for northern cities, 1,705 for southern cities, and 1,041 for all cities. For two-story dwellings, the northern average was 1,596 square feet, the southern average was 1,959, and the national average was 1,606. The overall average area for the combined story heights in all cities was found to be 1,208 square feet.

As further evidence that the size of houses varies between northern and southern cities an analysis of the story heights of houses disclosed that only 53.7 per cent of the cases in northern cities were one-story dwellings as against 93.22 per cent for southern cities.

Design Characteristics Determined

The next step in the analysis was to determine the design characteristics of these houses, such as the percentage of houses with full, partial, or no basements, the number of baths, and items of a like nature.

In each city a percentage distribution for each design characteristic was calculated from the number of cases in the sample. The percentages were then weighed by the proportion that the volume of new homes started in the particular office bears to the total for the entire country and weighed averages computed for each of the design characteristics.

There are presented below some of the major design characteristics and the percentage distribution of the individual items:

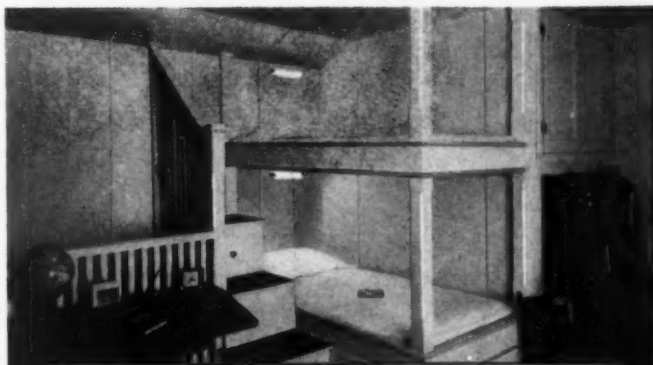
DESIGN CHARACTERISTICS OF FHA INSURED HOUSES

| Item | Per cent Distribution | Tank with furnace coil 1.35 Instantaneous (no tank): | |
|----------------------------|--------------------------|---|--------|
| 1. Basements: | | Gas fired..... 8.04 | |
| Full | 55.03 | Electric | .06 |
| Partial | 14.20 | 8. Heating, warm air system: | |
| None | 30.77 | Gravity | 23.52 |
| 2. Fireplaces: | | Forced | 18.99 |
| Included | 62.28 | Pipeless furnace..... | .74 |
| None | 37.72 | Floor furnace..... | 21.60 |
| 3. Gutters and downspouts: | | Space heater..... | 9.96 |
| Included | 72.98 | Stoves | 2.21 |
| None | 27.02 | Total | 77.02 |
| 4. Weatherstripping: | | Hot water system: | |
| Included | 19.74 | Gravity | 7.44 |
| None | 80.26 | Forced | 4.76 |
| 5. Screens: | | Total | 12.20 |
| Included | 88.73 | Steam system..... | 8.71 |
| None | 11.26 | None | 2.07 |
| Screens: | | | |
| Full | 82.69 | Grand total | 100.00 |
| Half | 17.31 | Firing method, Manual: | |
| 6. Bathrooms: | | Coal or wood..... | 37.41 |
| 1 bathroom | 79.79 | Oil space heater..... | .20 |
| 1 1/2 bathrooms..... | 11.93 | Gas space heater..... | 9.79 |
| 2 bathrooms..... | 6.81 | Gas floor furnace..... | 21.60 |
| 2 1/2 bathrooms..... | 1.47 | Gas radiant heater.... | .16 |
| Stall Showers: | | Total | 69.16 |
| Included | 23.75 | Automatic: | |
| None | 76.25 | Coal stoker..... | 1.31 |
| Shower Over Tub: | | Oil, central system.... | 13.13 |
| Included | 55.83 | Gas, central system.... | 16.40 |
| None | 44.17 | Total | 30.84 |
| 7. Storage tank heaters, | | Grand total | 100.00 |
| Gas fired: | | | |
| Tank with side arm.. | 35.04 | | |
| Under fire type..... | 46.84 | | |
| Oil fired..... | .56 | | |
| Coal fired..... | 5.44 | | |
| Electric | 2.67 | | |

Since at the present time the use of metals is vital to the national defense, further analyses were made involving the type of materials entering into construction of residential buildings

(Continued to page 90)

Uncle Sam builds bedrooms, too!



YOUR IDEA of a sturdy bedroom may be something like the one shown above. Designed for he-man comfort, it is built of materials to match any rough-and-tumble scuffle. Walls and ceilings are Presdwood*—a sturdy Masonite* wood-fibre hardboard with a marble-smooth surface of unusual hardness. Many builders have selected Presdwood—or its highly moisture-resistant companion product, Tempered Presdwood—for use throughout the homes they have built.



TODAY Uncle Sam is building bedrooms, too—but the Army and Navy call them barracks—in training camps all over the country. Many of them have walls and ceilings made of Masonite Presdwoods—for, when permanent buildings must be constructed in a hurry, Presdwoods meet the most rigid specifications. In every branch of the Defense Program, Masonite Products are being used in ever-increasing quantities. If Masonite Corporation or your Masonite dealer cannot fill your normal requirements as rapidly as in the past, it is because these modern materials are so ably doing their part in our National Defense effort.

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\$1,600,000 in new homes in 1940

That was the record set by W. C. Tackett, Inc., leading operative builder and contractor of Chicago. In these homes ranging in price from \$15,000 to \$35,000, Western Pines were used for sash, doors, window and door frames, interior and exterior trims, porch work, screens, paneling, mouldings, and built-in fixtures.



Mr. Tackett states that Western Pines insured fine appearance when finished or painted—rich tones in keeping with the type of homes constructed.

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next job better. Try Them.**

WESTERN PINE ASSOCIATION

YEON
BUILDING



PORTLAND,
ORE.

*Idaho White Pine

*Ponderosa Pine

*Sugar Pine

***These Are the Western Pines**

(Continued from page 89)

with stress being laid on the metals being used. The findings of the analysis of design characteristics and relative use of materials were the basis for determining quantities.

The statistical method for calculating the type of material was similar to that used for structural characteristics.

The following tables present the types of materials used in interior and exterior residential construction:

TYPES OF MATERIALS USED IN RESIDENTIAL CONSTRUCTION

| EXTERIOR | Per cent Distribution | | |
|---|--------------------------|---|-------|
| 1. Exterior Walls: | | 9. Soil and waste piping under basement floor: | |
| Frame with brick or stone veneer | 20.58 | Cast iron..... | 95.68 |
| Frame with wood sid- ing or shingles..... | 42.55 | Terra cotta..... | 4.32 |
| Frame with asbestos side or shingles.... | 3.19 | 10. Flooring: | |
| Frame with stucco.... | 15.43 | Sub flooring: | |
| Masonry with brick or stone face..... | 10.17 | Wood | 99.91 |
| Masonry with cinder or concrete block .. | .56 | Other | .09 |
| Other types..... | 7.52 | Finish flooring: | |
| 2. Roofing: | | Wood | 99.07 |
| Built up..... | 5.07 | Other | .93 |
| Composition shingles | 47.40 | 11. Lath and plaster: | |
| Wood shingles..... | 35.60 | Metal lath | 1.25 |
| Slate, tile or asbes- tos shingles..... | 11.09 | Wood lath | 33.13 |
| Galvanized iron..... | .22 | Sheet | 55.58 |
| Tin | .10 | Dry wall | 9.78 |
| Other types | .52 | Other | .26 |
| 3. Gutters and downspouts: | | 12. Insulation: | |
| Galvanized iron..... | 83.01 | Roof or ceiling: | |
| Copper | 9.13 | Metal | 1.09 |
| Wood gutters—cop- per downspouts.... | 7.86 | Other | 24.20 |
| 4. Windows: | | None | 74.71 |
| Basement: | | Walls: | |
| Wood | 24.22 | Metal | 1.05 |
| Steel | 44.98 | Other | 8.91 |
| None | 30.80 | None | 90.04 |
| Above basement: | | 13. Electric Wiring: | |
| Double hung wood.. | 91.12 | Knob and tube..... | 27.42 |
| Casement wood..... | .15 | BX cable | 30.19 |
| Steel | 8.73 | Romex cable..... | 24.38 |
| 5. Screens: | | Flexible conduit..... | 8.77 |
| Bronze | 25.47 | Rigid conduit..... | 8.85 |
| Copper | 11.88 | Other | .39 |
| Aluminum | .72 | 14. Plumbing Fixtures: | |
| Galvanized | 60.61 | Cast iron..... | 92.30 |
| Steel painted..... | 1.32 | Stamped steel..... | 7.70 |
| 6. Type of material in Termite protection: | | Inside water piping: | |
| Copper shields..... | 32.67 | Galvanized steel.... | 70.04 |
| Galvanized iron shields | 29.37 | Wrought iron..... | .54 |
| Treated lumber shields | 37.96 | Copper | 20.69 |
| 7. Weatherstripping: | | Brass | 8.73 |
| Zinc | 68.98 | 15. Water heater storage tanks: | |
| Bronze | 31.02 | Galvanized iron..... | 89.40 |
| INTERIOR | | Copper | 7.52 |
| 8. Basement Essentials: | | Monel metal | 3.08 |
| Columns: | | 16. Heating Furnaces: | |
| Wood | 36.09 | Steel | 70.56 |
| Steel | 45.36 | Cast iron..... | 29.44 |
| Masonry | 18.55 | Heating boilers: | |
| Girders: | | Steel | 46.63 |
| Wood | 65.78 | Cast iron..... | 53.37 |
| Steel | 34.22 | Radiation: | |
| | | Exposed | 53.73 |
| | | Concealed cast iron | 35.00 |
| | | Concealed copper.... | 11.27 |
| | | Heating pipes: | |
| | | Steel | 88.88 |
| | | Wrought iron..... | 3.47 |
| | | Copper | 7.65 |

Home Building Future Is Subject of All-Industry Meeting in Detroit, Nov. 4-7

WASHINGTON developments profoundly affecting home building, including priorities and how far they give the green light, will be the No. 1 matter before home builders of the country when they hold their principal meeting of the year in Detroit November 4, 5, 6 and 7. The meeting, an all-industry meeting at a time when the fate of the industry for some years ahead is in the making, will be held in connection with the annual convention of the National Association of Real

Estate Boards, with the Book-Cadillac and Statler hotels as convention headquarters.

The Institute, states President David D. Bohannon, San Francisco, following its recommendations as to workable regulations for defense housing priorities, has been in constant conference with officials of the defense program to aid in working out for civilian home building as favorable priority treatment as is consistent with the national defense effort. It will work closely with administrators of the regulations to minimize confusion and hardship in the industry. John McC. Mowbray, Baltimore, chairman of the Institute's important committee on priorities, prices, and substitute materials, a committee whose membership represents the whole home building industry of the country in dealing with the priorities problem, will report to the convention the current situation on priorities and on the systematic search for substitute materials for metals, etc., on the critical list, a search in which the Institute is working directly with materials manufacturers.

Sullivan Jones, administrator of the defense housing priorities system in OPM, will tell the home builders at first hand what experience under the regulations has divulged up to that time. Experience, of necessity, will be the basis for any adjustments that may later be made.

Peter Stone, chairman of the Central Housing Committee and one of the two economists who wrote the TNEC summary of its findings on housing, will lead a round table on activities with respect to the control of prices of building materials.

Curt C. Mack, M.A.I., assistant administrator and director of underwriting of FHA, will himself be discussion leader of a round table on HBI's appeal that the cost appraisal system of FHA be modified to recognize increased building costs.

Howard P. Vermilya, director of FHA's technical division, will lead a round table discussion on steps to encourage the production and use of substitute materials in home building.

Defense Housing Coordinator Charles F. Palmer, as previously announced, will be banquet speaker for HBI on the evening of November 7. His subject will be the whole field of defense housing.

Hugh Potter, president of the River Oaks Corporation, Houston, Texas, a past president of NAREB, former chairman of its Home Builders Division, will talk on the critical place of home building in today's economy. In Houston alone approximately 25,000 persons depend for their livelihood on the home building industry, Mr. Potter points out. Some 6,500,000 persons, it is estimated, are engaged directly or indirectly in the construction industry.

Milton W. Morris, San Francisco, executive secretary of the National Home Builders Association, member of the industry's executive subcommittee on priorities, prices, and substitute materials, will lead a round table on special savings which home builders can make through organization.

Paul E. Stark, Madison, past president of the Association, selected to be dean of a course in home building projected by the Institute, will lead a round table on education in the home building field and what direction it should take.

Development of fair building codes in the various cities to eliminate make-work, monopolistic or obsolete provisions, a movement which priority regulations is giving a great push, will get convention attention.

The entire afternoon of Thursday, November 6, will be given by the home builders to a tour of dwelling construction now in progress in the Detroit area.

B. F. Devine Advanced

B. F. DEVINE, who joined the Chain Belt Co., Milwaukee, in 1909, has been promoted from sales manager of the Construction Machinery Division to the position of manager of the Construction Machinery Division. Mr. Devine has served in the Purchasing Department, the Engineering Sales Department and later as assistant sales manager of the Construction Machinery Division. In his new position he also will supervise the management of sales of this division.



B. F. DEVINE

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Ventilator bars a minimum of
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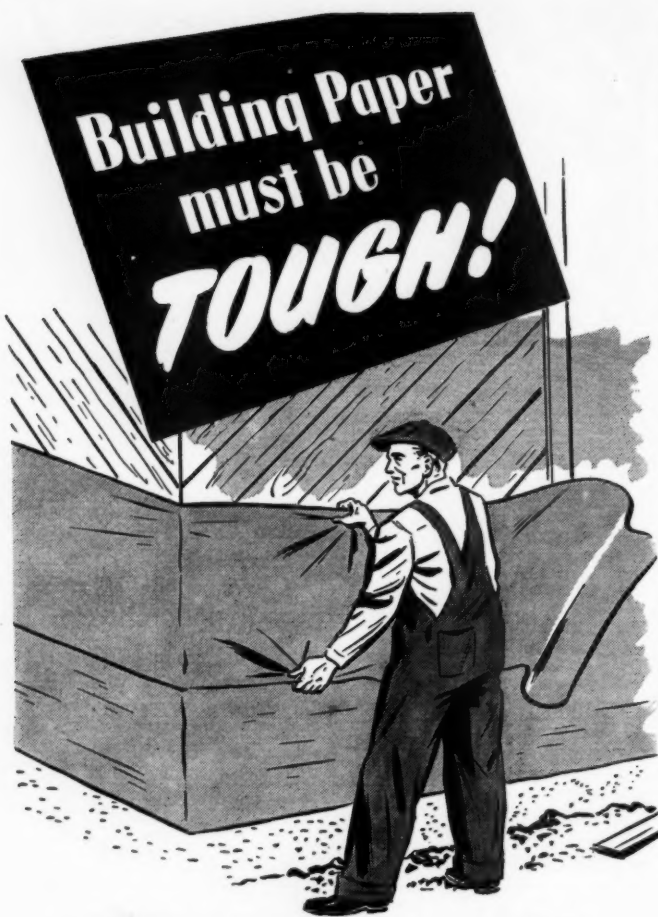
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White Preferred in Stucco Houses

POPULARITY of white houses applies to all kinds of construction, an investigation by Paul F. Keatinge, manager, White Cement Sales, Trinity Portland Cement Company, shows. The investigation was made among both builders and prospective home owners.

"We prefer white houses, whether they're frame, brick or concrete," was the almost unanimous reply. Greys and dull, drab colors may be suitable for some uses, but they certainly don't fit in buildings today, the study indicates.

Stucco is especially popular in Florida and California, where it is used on a high percentage of the homes built; and only stucco made with white cement will meet the home buyer's specifications, builders in these states agree. However, wide interest is being shown in white stuccos by builders and home owners in all parts of the country.

"The additional cost of white cement for stucco is negligible," Mr. Keatinge states. "And, when builders know that the use of white cement will win buyers, while a grey substitute makes sales difficult, they willingly pay the small extra."

"Also important to home owners is the fact that the resale value of white stucco houses is greater," Mr. Keatinge points out. "The owner of a white stucco house finds a ready acceptance for it, while one of the first objections raised to dark colors by prospective buyers is the extra cost necessary to make the stucco white."

"The gratifying result of this trend is that a new standard of beauty has been established for the American home, and the day of the 'freak' is behind us," Mr. Keatinge concludes.

Moses Awarded Kimbrough Medal

AT THE White Sulphur Springs, W. Va., annual meeting of the American Institute of Steel Construction, Hon. Robert Moses, Commissioner of Parks, New York, was awarded the J. Lloyd Kimbrough Gold Medal for his achievements in removing traffic bottlenecks in and around the City of New York. This medal, conceived in commemoration of the first president of the American Institute of Steel Construction, is awarded for some outstanding contribution to the steel construction industry. The award was made at the annual banquet of the Institute on Oct. 16, and is the first time the medal has ever been awarded.

The medal was presented by Clyde MacCornack, first vice-president of the Institute and chairman of the Committee on Medals and Awards.

Mr. Moses has spent over \$500,000,000 on State and City parkways, parks, bridges and beaches. He is now beginning to spend a second half billion on tunnels, bridges, elevated highways, grade separation projects and parks. His service in promoting the usefulness of steel is regarded as outstanding.



GOLD medal awarded to Hon. Robert Moses by the American Institute of Steel Construction.

Foster Heads Promotion for U.S. Radiator

ANNOUNCEMENT was made today of the appointment of Kramer W. Foster as promotion manager, by United States Radiator Corporation, Detroit. He comes to this job with a background of varied experience with the Union Guardian Trust Company, including work in the purchasing, real estate and advertising departments. A native Detroit, he was educated in the city's public schools and later attended Wayne University.

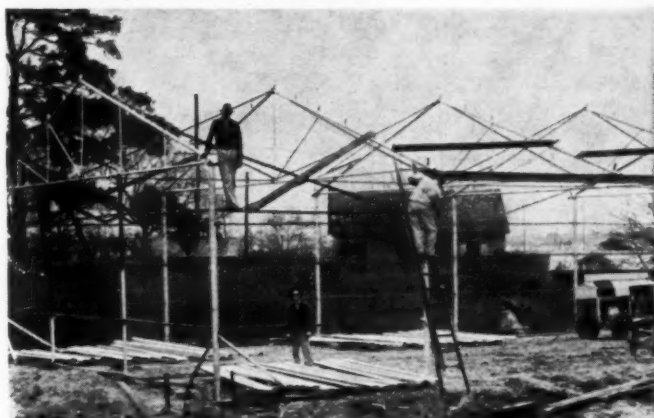
Used Pipe, Welded, Cut Cost on Texas Warehouse

A SAVING of over \$4,000 was enjoyed by the Southern Warehouse Company, Houston, Texas, when it constructed a 400 x 100 foot building from used pipe. Cost analysis sent to Hobart Brothers Company, Troy, Ohio, by the Beago Welding & Equipment Company of Houston is as follows:

| | |
|--|------------|
| Cost of Erection of Framework for 400 x 100 Foot Building | |
| Cost of used pipe..... | \$1,100.00 |
| Cost of cutting and forming..... | 75.00 |
| Cost of winch truck and driver..... | 100.00 |
| Cost of power | 35.00 |
| Cost of electrodes | 36.00 |
| Labor costs | 603.00 |
| Overhead | 150.00 |

Total cost of above items.....\$2,099.00

Construction of a similar size building from riveted angles and "I" beams costs over \$7,000, it is estimated.



WAREHOUSE being constructed from used pipe, fabricated in welding shop.

Trusses and pipe columns were fabricated in a welding shop in ten days by five welders and one helper. Framework was erected in one week by two welders, a helper, and a driver operating a Ford winch gin pole truck.

Chrysler Airtemp Equips Huge Defense Building

WHAT IS probably the largest air conditioning installation of its kind was recently completed in the United States Navy & Munitions Building in Washington, D.C., by the Griffith-Consumers Company, Chrysler Airtemp's Washington distributor. The fourteen wings of this building contain over a half million square feet of floor space—the equivalent of a 14-story office building covering a full 300-foot city block and running back to a depth of 120 feet. Each wing has its own separate air conditioning system, operating independently of the others.

The project required fourteen 75-horsepower compressors—1050 horsepower. Since the machines were to be installed on the fourth floors of the 14 wings, government engineers were most careful in selecting compressors which would operate without vibration and noise. They also had to be light enough so as not to require heavy foundations.

The Navy & Munitions Building installation is the largest of the many commercial and private installations which have been made by the Griffith-Consumers Company recently in Washington homes, apartment houses, restaurants, motion picture theaters, beauty shops, retail stores and offices. Among its other large installations are those in Federal Government buildings including the Archives Building, Civil Aeronautics Authority, and the telephone exchange of the Department of Commerce.

SPA Advances Gaffney

PETER C. GAFFNEY, JR., has been appointed assistant secretary of the Southern Pine Association, New Orleans, La., according to an announcement by Secretary-Manager H. C. Berckes. He joined the Association staff in 1926.

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BONDERIZED STEEL

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OFFER THE SMALL HOME BUILDER THE ADVANTAGES OF LOW COST, TIME-SAVING, CONVENIENT INSTALLATION AND HIGH QUALITY.



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Ira Bernkopf, Builder Lester Maxon, Arch't.

THE SMALL HOUSE BUYER WELL KNOWS THE BENEFITS OF STEEL CASEMENTS—BETTER APPEARANCE—MORE CONVENIENCE IN OPERATING AND IN CLEANING—BETTER VENTILATION—LESS TROUBLE AND EXPENSE IN UPKEEP. HE WANTS STEEL CASEMENT WINDOWS.

THE BUILDER CAN SATISFY THIS DEMAND, WITHIN THE COST ALLOWANCE BY USING HOPE'S HOLFORD CASEMENTS AND BE SURE OF GIVING LASTING VALUE.

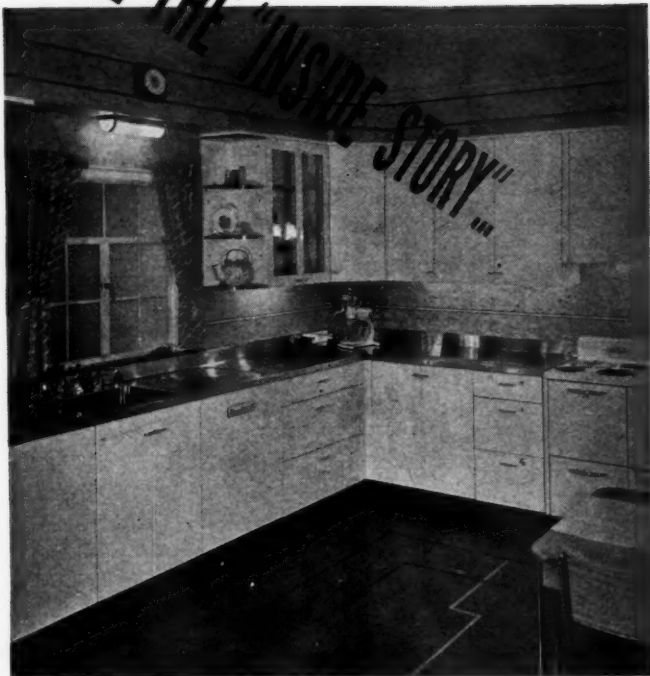
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TELL THE "INSIDE STORY"



WITH TILE-TEX

IF you are building homes to sell, you know how important it is to make the interior of the home attractive and appealing to women. It is an accepted fact that women control the purchase of most homes, and to women interiors are vitally important.

Here, in Tile-TEX, is a material for both floors and walls that can be used to build modern, attractive interiors in the key rooms of today's home—the bathroom, the kitchen, and the basement playroom. And, in using Tile-TEX, you make important savings against outmoded and conventional materials.

Tile-TEX floors are low in first cost, easy to maintain, long-wearing, and eye-appealing. Kitchens, bathrooms, and recreation rooms are "natural" areas for this new, resilient flooring.

Tile-TEX walls are currently the sensation of the residential home building industry. Low initial cost, speed of installation, attractive color styling—all of these factors are making it the choice of progressive builders seeking to satisfy the public taste for a wall treatment that meets all present day requirements.

There is an approved Tile-TEX contractor near you who can show you Tile-TEX products now in service—show you how little they cost—and demonstrate how they can help you sell new homes. Write today for his address and for free copies of the new Tile-TEX booklets on floors and walls.

THE Tile-TEX Company CHICAGO HEIGHTS ILLINOIS

The Tile-TEX Company
Chicago Heights, Illinois

Send me complete literature on the following:

- ☐ "Floors That Endure" by Tile-TEX
- ☐ "Decorative Walls" by Tile-TEX
- ☐ "Flexachrome," an Exclusive Tile-TEX Product

Name.....

Address.....

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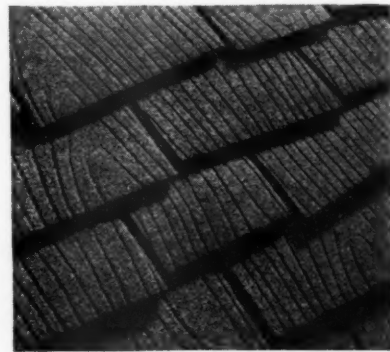
PRODUCERS TELL US—

About Products, Personnel, Plants

Custom-Cut Roof Character with Strip Shingle Economy

THE BEAUTY of a custom cut asphalt shingle roof with the economy of strip shingles is made possible by the new patented USG Random-Tab shingles announced by the United States Gypsum Co., Chicago.

In the past, strip shingles have meant monotony of pattern. Now, it is impossible to repeat the patterns of roofs where the new Random-Tab shingle is used. In addition to the distinctive effect obtained with the irregular lines of these shingles, the four colors in which it is available are enhanced by beautifully blended tones on attractive wood grained textures that accentuate the super-deep shadow lines.

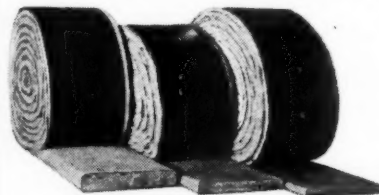


NEW USG Random-Tab asphalt shingles

The shingle is especially suited to contractors or builders who want to obtain individuality in their homes without costly changes in building design that offset the savings from volume building.

The USG Random-Tab is self aligning, self nail covering, self joint-protecting, and self-randoming. It may be applied from right to left, or left to right, without any special care in selection of the strips.

Barrett Rock Wool VB Blankets



NEW BARRETT rock wool blanket in 3 thicknesses.

THE BARRETT Co., 40 Rector St., New York City has brought out a rock wool blanket in three thicknesses, of width to go between studs, and protected with vapor barrier paper. This insulation is easily installed, low cost, efficient fireproof strip form for wall, roof and ceiling use. Fully enclosed between vapor barrier paper one side and creped kraft paper on other side and edges, it is sealed with sturdy nailing flanges scored for automatic air space recessing. Width (15") fits standard (16") spaced building framing; finest quality, packed in sturdy corrugated cartons.

A THICKNESS FOR EVERY JOB AND POCKETBOOK

| Type Number | Thickness | Carton Contents | Approx. Shipp'g Wt. |
|-------------|-----------|-----------------|---------------------|
| V 83 | Full | 50 sq. ft. | 60 lbs. |
| V 82 | Medium | 75 sq. ft. | 70 lbs. |
| V 81 | Single | 125 sq. ft. | 80 lbs. |

New Mueller Winter Air Conditioning Unit

J. MUELLER Furnace Company, Milwaukee, announces the introduction of two new oil-fired winter air conditioners, Series "OVP" and the Series "OHP," equipped with Mueller mechanical draft type vaporizing oil burners.

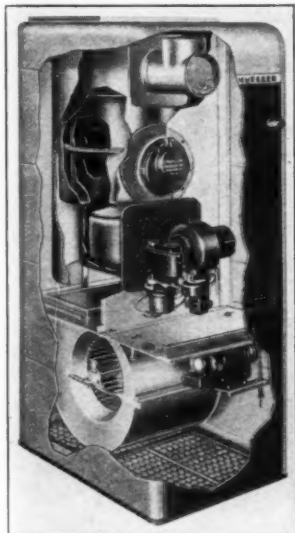
The series "OVP" is a vertical type unit with a maximum B.T.U. capacity at bonnet of 80,000 and an oil capacity per hour of

0.72 gallons based upon firing No. 2 API oil.

The entire unit is completely enclosed within a green crinkle lacquered cabinet with ample doors for access to controls, burner, flue outlet, fan and motor. The unit measures 66 inches in height, is 34 inches deep and 24 inches wide and shipped completely assembled.

The series "OHP" is a horizontal type unit having the same B.T.U. capacity and the same oil capacity as the "OVP" but has all controls and burner exposed. This unit measures 48 inches in height, 25 inches in depth and 46 $\frac{3}{4}$ inches in width. It is finished in green crinkle lacquer. The filter mounting rails are above the blower in the return air compartment and the return air connection is made at the top.

Both of these units are equipped with a Mueller mechanical draft type vaporizing oil burner in which all air for combustion is positively supplied by a motor-driven centrifugal type blower.



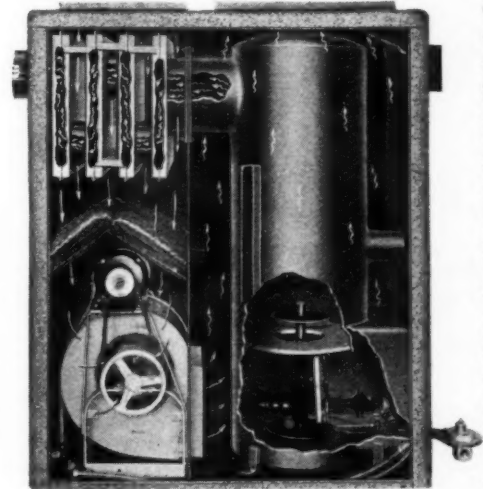
ONE of Mueller's new oil-fired winter air conditioners.

Lochinvar Offers "Package-Unit" Heaters

THE LOCHINVAR Products Division of the Michigan Tank & Furnace Corp., Dearborn, Mich., is ready with its new models LG-63, LG-80 and LG-90, which represent a new development in the small home furnace. All of these units are

constructed as "package-units," that is, they are assembled on a permanent heavy steel base at the factory, crated and delivered to the job ready to be set in their permanent location. The burner and controls, blower and transformer are in place, completely wired, and ready for connection to the house circuit.

This feature is stressed as it is said to mean big savings in installation cost while



CUT-AWAY view of new Lochinvar gas-burning winter air-conditioner.

insuring proper assembly of the furnace and the elimination of vibration or noise by having the furnace squarely mounted on a rigid firm base. This base, it is said, completely seals the bottom of the furnace preventing any possibility of dust or dirt from the basement getting into the clean air passage.

The Lochinvar furnaces employ sound engineering principles of heat conversion. The return air passes over the radiator or economizer where it is preheated, and from there passes through the fireproof filters to the center opening of the blower. The blower then forces the air into the heating compartment where by means of baffles it is forced to scour every portion of the heating drum. As the air progresses toward the warm air discharge, it keeps contacting a hotter portion of the furnace. The design of the radiator gives an extraordinary large heating surface, and thus insures the conversion of the maximum of heat liberated by the products of combustion.

The Lochinvar furnace is designed strictly for gas burning.



ADD THIS BEAUTY TO MODERN HOMES

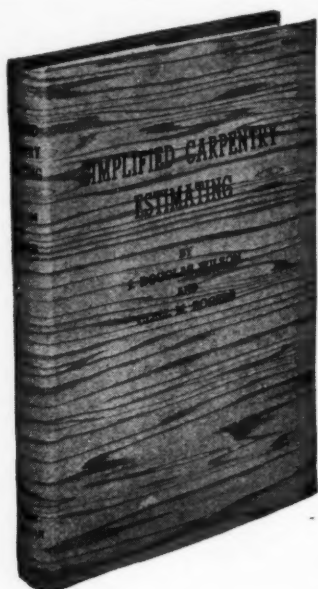
- Give homes daylight, sunshine and cheer—and underfoot, the *floors of tomorrow*... satin-smooth, richly beautiful Maple.
- This modern flooring captures sunlight. Its lighter color emphasizes its bright cleanliness. Its fine, quiet grain is in close harmony with present-day, close-grained furniture, bringing all-over room beauty beyond the reach of gaudy floors. Maple brushes clean, and is easily refinished to fit any change in decorative scheme.
- Today Hard Maple costs no more—and gives infinitely more—in beauty, in service, in living satisfaction. When you build or remodel, give your home a modern floor of Maple. Write for free Home Builder's folder with color illustrations of various patterns.

MAPLE FLOORING MANUFACTURERS ASSOCIATION
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NOTE TO DECORATORS—Maple fits any decorative scheme—comes in various sizes and grades, in strips or blocks to form many fascinating patterns, and may be finished in a wide range of colors besides "Natural." Write for Home Builder's folder containing sample reproductions.

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the
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By J. Douglas Wilson
Head, Building Trades Department,
Frank Wiggins Trade School,
Los Angeles, California

and Clell M. Rogers
Mathematics Instructor, Venice
High School, Venice, California

Based upon the series of articles entitled *How to Estimate Accurately*, which appeared in *American Builder and Building Age* last year, this new book explains the "taking off" of a bill of material for the construction of a frame house. Simple arithmetical methods of accurately estimating all costs are explained step by step.

Chapter Headings

Estimating Fundamentals. Foundation Material. Framing. Exterior Finish. Interior Finish. Hardware. Building Information and Tables. Index.

208 pages, 71 illus., 5 x 7, cloth, \$2.50

Book Department

AMERICAN BUILDER and BUILDING AGE

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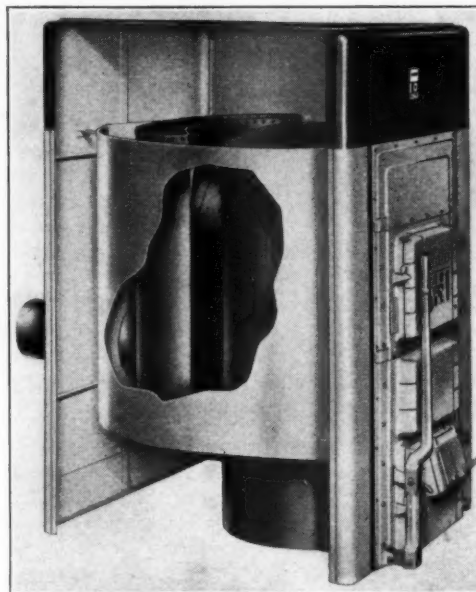
New Sunbeam Steel Furnace Offered

THE American Radiator & Standard Sanitary Corp., Pittsburgh, announces a new Sunbeam steel furnace—the Arlington "Square." Moderately priced, this newest member of the Sunbeam line is a smart, square jacketed furnace. It has all the improvements of the conventional "Arlington" furnace, regularly furnished with a round galvanized casing, including a larger, more massive radiator, duplex grates, full height fire box and higher ratings.

Home owners who wish to make a playroom of the basement will welcome the splendid appearance of the new Arlington "Square" because it will blend with any type furnishings. The handsome jacket is finished in dark Placid blue and black and has a soft suede texture.

Contractors will appreciate the ease with which the sturdy square jacket can be assembled. Warm air pipes can be led from the sides or top.

The Arlington "Square" comes in four popular sizes, with units from 20 inch to 27 inch shell diameters. All sizes are available in models for oil or coal—stoker or hand fired. Oil fired units are offered in gun or rotary type models.



THE Arlington "Square," a new Sunbeam steel furnace, offered in four sizes and for oil or coal.

Kitchen Towel Dryer

AN ELECTRIC towel dryer, to dry kitchen towels and cloths quickly and easily, has been designed and built by the St. Charles Manufacturing Co., St. Charles, Ill. Air is warmed by an electric heating element and circulated by a fan placed above the drying compartment.



Louvres at the top and vents below permit free air circulation. Racks slide in and out. The cabinet is made in three widths, 18, 21, and 24 inches, having two, three and four sliding racks, respectively. In heating elements, the 18-inch and 21-inch sizes have one 350-watt element, the largest size two 350-watt elements. The cabinet is designed for inclusion in any kitchen arrangement, or as a separate cabinet.

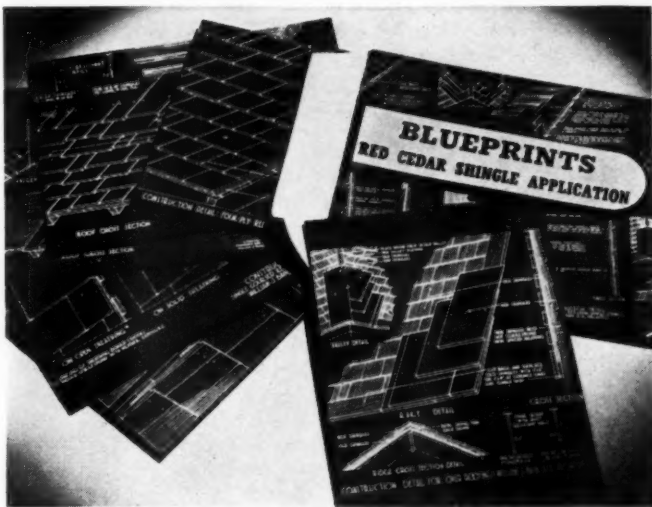
ELECTRIC towel dryer is a convenient piece of kitchen equipment.

Shingle Details Offered

BLUEPRINTS of red cedar shingle application, presenting an actual "how-to-do-it" story for carpenters, contractors, lumber dealers and other building professionals, have been produced by the Red Cedar Shingle Bureau, Seattle, Wash., and are meeting with great success as a practical educational feature.

A number of different types and styles of shingle construction are featured in the blueprints, covering roof and sidewall work. These include both the conventional methods of application and the more unusual and unique styles. Among the featured blueprint patterns are the Standard Roof, Double-Coursing for sidewalls, the Four-Ply Roof, Over-Roofing, Single-Coursing for sidewalls, and the Staggered Roof.

William J. Bain, A.I.A., who is author of the blueprints, is recognized as an authority on shingle application and architecture. He has shown on each blueprint the maximum permissible weather exposures for various roof pitches, proper size and placement of nails, flashing specifications, proper breakage of joints, and many other essential details of construction.



BLUEPRINT patterns covering red cedar shingle roof and sidewall application.

Edwards Door Chimes

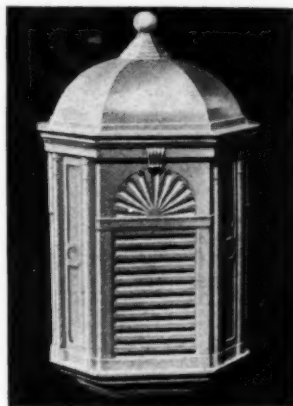
THE 1942 line of Edwards Door Chimes represents an advanced step on the part of Edwards & Company, Norwalk, Conn., to locate the door chime market in the category of furniture and fixtures. Consequently each model being currently introduced has been designed to harmonize with furniture styles and decoration trends.

To achieve this end, Lurelle Guild, one of America's authorities on traditional design, has created 22 new models, with a view toward their permanency.

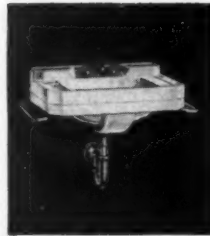
Edwards has deliberately aimed at lasting designs like the Chapel and Colonial, and avoided the tinselly modernistic and gadget classes which are thought to be temporary fads.

Oversized symphonic tubes give extra depth and resonance of tone. Each tube is Sonoscope tested before leaving the factory, assuring more accurate tone than can be established through tuning by the human ear.

Edwards promotional plans call for spectacular consumer advertising in leading national magazines. A complete retail selling program has been developed, to be linked up with well balanced, tested merchandising and selling plans geared for all classes of retail outlets.



EDWARDS musical door chime, "The Chapel."



The COSMETTE Lavatory is smart, compact and modern in design—perfect for installations where space is at a premium. This model with chrome plated towel bars.



The CAMEL Water Saver Closet with special reverse trap bowl and quiet flushing action; free standing.



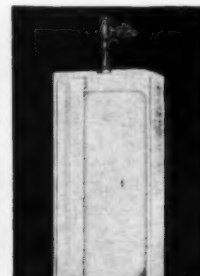
The AVON Lavatory with high back, square basin, front overflow and anti-splash rim. Case vitreous china bathroom fixtures are available in sixty colors, and white.



Defense authorities now recommend that vitreous plumbing fixtures be used to the widest extent practicable in defense housing and defense plant work. This means that by choosing Case fixtures, all of twice-fired vitreous china, you can cooperate with your government's program of conserving materials vital to direct defense needs. In addition, Case quality fixtures also provide the maximum of health protection that is more necessary today than ever before. For defense housing, you have a wide choice of Case bathroom fixtures, among which those pictured above are being specified for many new installations. For defense commercial and manufacturing buildings, the fixtures shown below are among the most popular in the extensive Case line. Case fixtures are profitable to install, easy to sell and easy to secure from your plumbing supply wholesaler. Write to Dept. L-111, W. A. Case & Son Mfg. Co., Buffalo, N. Y.



The CASCO Vitreous China Wall Hung Washout Urinal with extended shields, integral flush spreader, strainer and trap with cleanout—precision-built for long service.



No. 2300—18" CASCO Vitreous China Straight Front Urinal Stall with chromium plated flush valve.



The CASE No. 1600 Syphon Jet Water Closet Combination with elongated bowl, hard rubber seat and chrome plated flush valve—a serviceable and popular number.

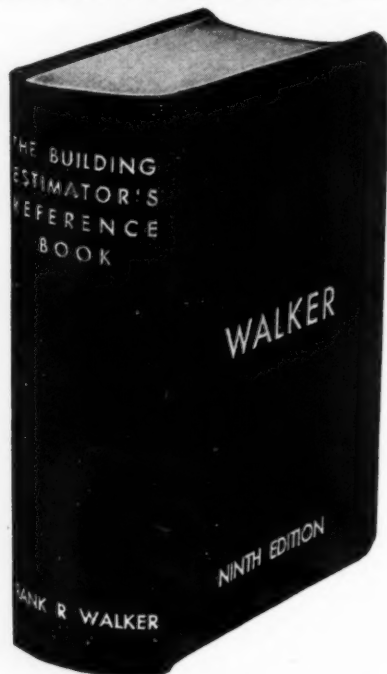
CASE

DISTINCTIVE PLUMBING FIXTURES

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1. Increase Your Profits
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4. Save Your Estimator's Time
5. Perform Your Work at the Lowest Possible Cost



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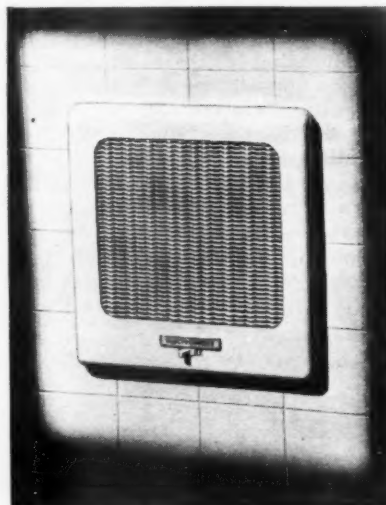
New York, N. Y.

New Bilt-In-Wall Electric Heater

THE NEWEST addition to the "Electromode" electric unit heater line, the Bilt-In-Wall electric heater, Model WJ 15, has been announced by the Electric Air Heater Co., Division of American Foundry Equipment Co., Mishawaka, Ind.

This smartly styled, cabinet contains the exclusive cast-in electric safety element that has revolutionized electric heating. There are no exposed hot wires or glowing elements of any kind.

A flip of the switch starts a flow of mellow heat. A quiet motor-driven fan distributes warm air uniformly throughout the room giving heat where it is needed most—in the "living zone."



NEW model electric heater which is built in wall.

Transparent Glass Block Offered

THE DEVELOPMENT of a transparent glass building block that affords almost window-like vision has been announced by H. R. Haynes, manager of glass block sales, Pittsburgh Corning Corporation, Pittsburgh, a jointly owned subsidiary of the Pittsburgh Plate Glass Company and the Corning Glass Works.

The new block, called the "Vue" glass block, was developed for specific needs where some outside vision is desired through panels of non-transparent glass blocks. The new "Vue" block permits sufficient general vision of large objects or movements beyond the panel to prevent a "shut-in" feeling, although the visibility of sharp detail is not possible under most conditions.

"With this visual quality," Mr. Haynes said, "the 'Vue' block combines the high insulation properties of the usual glass block. Like other PC blocks, it contains a partial vacuum, a dead air space, which results in the glass block panel having approximately the same insulation value as a solid masonry wall eight inches thick, and more than twice the insulation value of ordinary single-glazed windows."

Speed Trips for Curtis

CURTIS Companies Incorporated, Clinton, Iowa, manufacturers of Curtis Woodwork, recently put into use a company airplane for quick business trips of officials to various parts of the country. The plane will operate out of Clinton and will be at the disposal of executives and sales representatives. It is a five passenger, 225 horsepower Beechcraft with a cruising speed of 155 miles per hour. The plane will be in charge of a company pilot.



AIRPLANE being operated by Curtis for company business.

PRACTICAL JOB POINTERS AND BUILDING DATA

AN EXCHANGE of ideas and methods in building practice. For individual contributions, two dollars or a year's subscription to American Builder is paid when published; state occupation.

Wooden V-Block Aids in Filing Auger Bits

A SIMPLE wood V-block, such as shown in the photo, will be found very useful for holding an auger bit immovable while touching up the cutting edges with a file. Simply lay the bit in the V and hold the set-up rigidly on the bench top with the left



FILING auger bit made immovable by placing in wooden V-block.

hand. If desired the block may be held in the vise. The slightly yielding wood surface against which the bit is pressed keeps the tool from turning with the pressure of the file, eliminating any chance of ruining the edge through slippage of the bit.—W. C. WILHITE, Carlinville, Ill.

Olsen Clips Offered by Flintkote

THE PATENT and Licensing Corporation (a subsidiary of The Flintkote Company, 30 Rockefeller Plaza, New York, N. Y.) has acquired a group of ingenious spring wire clips and fasteners which were developed by the former Olsen Products Company.

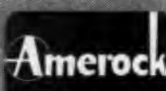
Olsen Clips include three types which provide simple but positive means for securing gypsum lath and board and insulating lath and board to wood studs. A fourth clip eliminates the use of tie-wires for attaching metal lath to metal studs and a fifth clip is for the concealed fastening of insulation tile and plank to wood lath furring strips. All Olsen Clips are the subject of applications for patents now pending.

The Olsen Type A Wood Stud Clip is a wire clip with barbed points which hold firmly in the sides of a wood stud due to the spring action of the clip. The lath or board is held in place against the stud without being rigidly attached thereto, thus allowing for lateral shifting to adjust for shrinkage or warping without damage to plaster surfaces.

The Type B Corner Clip is a wire clip for use in the angles of ceilings and walls at room corners, thus eliminating the necessity for metal corner heads or other reinforcing.

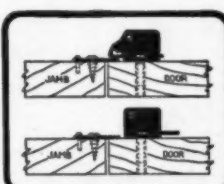

The Type C Combination Clip is nailed to wood studs or used where junctions between lath or board panels do not register on studs. The resilient spring action of the Type C Clip which holds the lath away from the framing, reduces the transmission of sound through ceilings and partitions. The Type C Clip permits the lath to come and go with warping and expansion of the framing, thus tending to eliminate plaster

(Continued to page 100)



Achievements!

WINGED-LATCH BOLT PRECISION MECHANISM

Extra-long throw of sliding bolt moving parallel with door assures perfect operation at all times regardless of ordinary swelling or shrinkage of door.

Improved precision winged-latch bolt mechanism (Pat. No. 2,233,278) is made for lifetime service and requires no lubrication for smooth, positive action. Reversible — easily applied to right hand or left hand doors up to 1 1/2" thick. Two strikes included for flush or overlapping doors and for under-shelf application.

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OR WRITE FOR CATALOG

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AMERICAN CABINET HARDWARE CORP., ROCKFORD, ILL.

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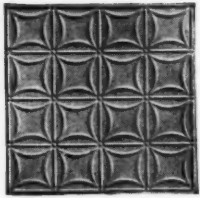
Timber Engineering Company, Inc.

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Washington, D. C.

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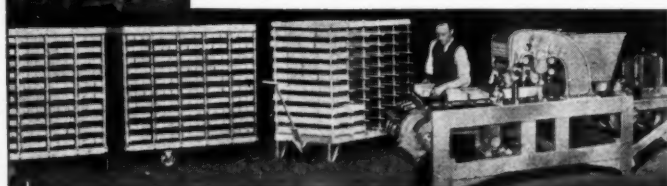
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Scores of established manufacturers have proven the quality and salability of product, as well as the earning power and stability of this business. (Names on request)

This opportunity offered only one man in each community to make this proven low-cost material. (Samples furnished)

Act now while your territory is still open. Write or wire for Free Books and learn how you, too, can own one of these profitable businesses.

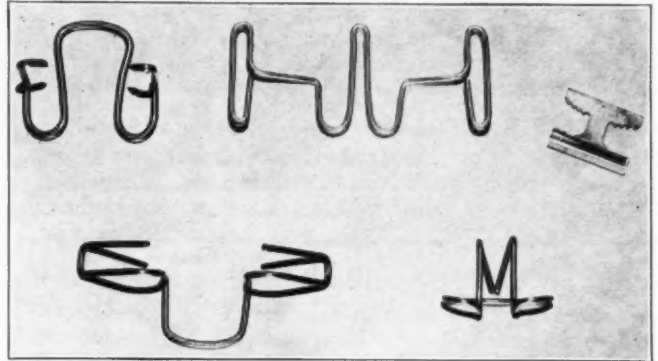
W. E. DUNN MFG. CO.
450 W. 24th Street Holland, Mich.



(Continued from page 99)

cracks, and is particularly useful for ceiling construction.

The Olsen Type D Metal Stud Clip is a spring wire clip for attaching metal lath to metal studs from the outer face of the wall. The operation is simple, positive and rapid. No tools

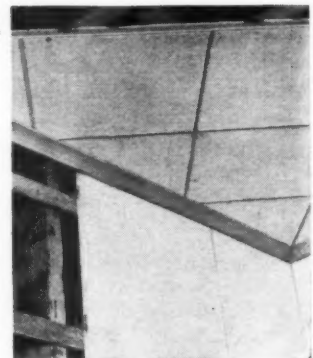


OLSEN CLIPS are a group of spring wire fasteners for "floating" wall and ceiling construction. Top row: (l. to r.) Type A Wood Stud Clip, Type C Combination Clip, and Tile and Plank Clip. Bottom row: Type B Corner Clip and Type D Metal Stud Clip.

TYPE A Wood Stud Clips provide fastening for gypsum or insulating lath or board to wood studs with true "floating wall" advantages. Note also the use of the Type B Corner Clip in wall and ceiling angles.



TILE AND PLANK Clips provide effective concealed fastening for insulating tile and plank, having tongue and groove joints, without marring the surface of the board; utilize wood lath instead of more costly furring.



are required. Tie-wires are eliminated.

The Olsen Tile and Plank Clip is a simple metal fastener of unusual design for the application without nails, of insulation board tile and plank having tongue-and-groove joints to ordinary wood lath in place of the more expensive 1" x 2" furring. The fastener is entirely concealed without marring the surface of the board.

New Method Sheathing Under Shingles

MUCH INTEREST is being shown by contractors and builders in a new method of spacing roof sheathing boards for the application of red cedar shingles. The new technique entails the use of 1x6 sheathing boards spaced apart on centers of double the shingle exposure.

Said to reduce both the amount of sheathing boards and the labor necessary for their application, the method is meeting with great favor since its comparatively recent introduction by the Red Cedar Shingle Bureau. With the accent on speed and economy coming with the current defense building program, the new sheath-

ing process is being used on a number of large projects.

Many practical advantages result from the technique. The use of wider, and fewer, sheathing boards involves considerably less handling and nailing on the part of carpenters. Wastage through breakage is reduced with the wider sheathing. Inasmuch as 1x6 stock is often employed for sub-flooring, contractors can thus order the same size and grade of lumber for both sub-flooring and roof sheathing. Carpenters commend the new method because the larger sheathing provides a stronger and safer support and the wider spacing between boards gives better foot rests.

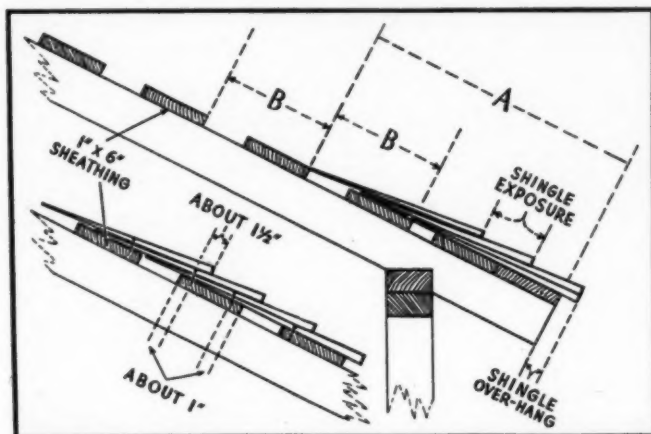


DIAGRAM illustrates new sheathing process which calls for use of 1x6 sheathing boards spaced apart on centers of double the shingle exposure.

Of extreme importance is the proper relationship of the shingles to the sheathing boards, thus assuring adequate nailing points. To insure proper application, the chart and table shown herewith has been designed. The figures in Column 1 represent the distance in inches between the lower edge of the first sheathing board at the eave-line and the lower edge of an arbitrarily placed sheathing board in the expanse of the roof. The sheathing boards are to be spaced from this arbitrarily placed sheathing board in two directions—upward to the peak or ridge of the roof and downward until solid sheathing is encountered (it being customary to apply sheathing solidly for varying distances from the eave-line). Two courses of shingles are nailed to each sheathing board, with nailing points approximately one inch from the lower and upper edges of the board.

The figures used are based on a shingle overhang of $1\frac{1}{2}$ inches beyond the lower edge of the first sheathing board at the eave. Add or subtract, respectively, any lesser or greater shingle overhang; for instance, deduct $\frac{1}{4}$ inch from Column 1 for an overhang of $1\frac{1}{4}$ inches. Deduct from the distances shown in Column 1 the thickness of any moulding which might be applied to the lower edge of the first sheathing board.

Each shingle should be nailed at a point $1\frac{1}{2}$ inches above the butt line of the next course to be applied. Extreme care must be exercised by the shingler regarding this nailing; the nailing of shingles too high may cause rejection of the roof upon official inspection.

Attractive two-color pamphlets completely illustrating the entire process have been produced and are being distributed by retail lumbermen to carpenters and contractors. Reasonable quantities are available free of charge by writing the Red Cedar Shingle Bureau, Seattle, Wash., or Vancouver, B. C.

| SHINGLE EXPOSURE | COLUMN 1 (A) Distance between lower edge of arbitrarily placed key sheathing board and lower edge of the starting sheathing board at the eave. | COLUMN 2 (B) Proper spacing of sheathing boards (lower edge to lower edge) below and above the key sheathing board indicated in Column 1. |
|------------------|---|--|
| $3\frac{3}{4}$ " | 21 $\frac{1}{2}$ " | 7 $\frac{1}{2}$ " Edge to Edge |
| $4\frac{1}{4}$ " | 24 $\frac{1}{2}$ " | 8 $\frac{1}{2}$ " Edge to Edge |
| $4\frac{1}{2}$ " | 26 " | 9 " Edge to Edge |
| 5 " | 24 $\frac{1}{2}$ " | 10 " Edge to Edge |

EXAMPLE— $4\frac{1}{4}$ " shingle exposure, 1x6 sheathing, and $1\frac{1}{2}$ " shingle overhang. Apply first sheathing board where desired at lower edge of roof; then attach lower edge of 1x6 sheathing board a distance of 26" (Column 1) from lower edge of first sheathing board at eave-line. Next, nail sheathing boards 9" apart (lower edge to lower edge as shown in Column 2) below this board until tight sheathing is encountered and above this board until peak or ridge of roof is reached. Starting course of shingles should be given an overhang of $1\frac{1}{2}$ "; shingles should be nailed $1\frac{1}{2}$ " above butt line of next course to be applied and nails should strike sheathing about 1" from each edge.

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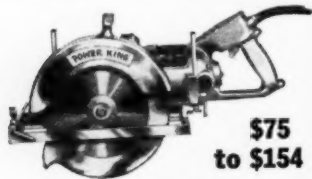
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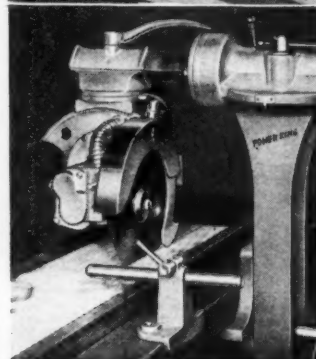
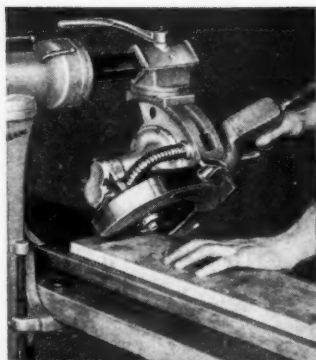
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Plycell Hollow Wood Blocks Tested

A NEWLY developed wooden building block which introduces several unique and revolutionary features in residential and industrial construction is being placed in production in California.

The blocks—known as Morgan Plycell Units—entirely eliminate the customary structural frame; the block units interlock in building up a wall in such a manner that the finished structure is a strongly bonded whole, as though molded from one material in one operation.

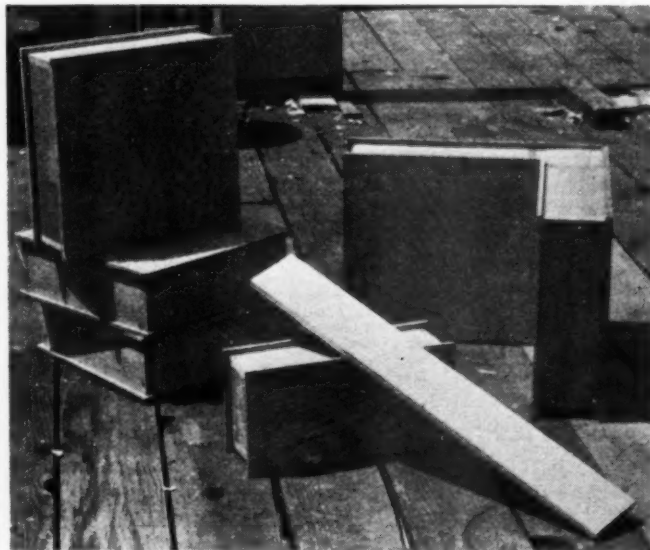
The blocks are simply hollow box-like frames with weather-proof plywood panels on two sides, bonded to the frames with Laucks construction glue. Each unit is actually a miniature wall section. With splines, the units are interlocked to form a completed wall of any size, ready to receive any desired wall finish.

The units and the construction system were developed by Arthur C. Morgan, an instructor in building trades who makes his home in Los Altos, California. With power machinery he is starting production on an order for enough units to build ten small homes.

Although Plycells can be manufactured in any size or shape, the



CONTRACTOR Joseph Greenbach of Palo Alto is building 10 small homes this way.



PLYCELL Unit Construction uses these wall blocks, 12" x 12" x 4" of exterior-grade plywood, plus 1" x 4" x 24" soft wood splines for interlocking the blocks in the wall.



FLANGES of the Plycell units are glued on a gluing machine before placing in the wall. Waterproof casein glue is used.

standard units now being produced are made up 1 foot square by 4 inches in thickness. With some half-size these units and corner units are used.

Individual units are solidly interlocked with a simple, though ingenious 2-way interwoven placement of connecting splines. This is the key to the structural strength of the new building system. Use of the special Laucks self-bonding construction glue assures a perfect and permanent bond on contact or with light pressure.

The plywood panels forming the sides of each unit project equally on all sides beyond the frame of the unit. Thus the connecting splines fit into and completely fill the spaces between the units and are hidden by the projecting lips of the plywood walls. Interweaving spline connections automatically align the units into walls that are true, parallel plane surfaces.

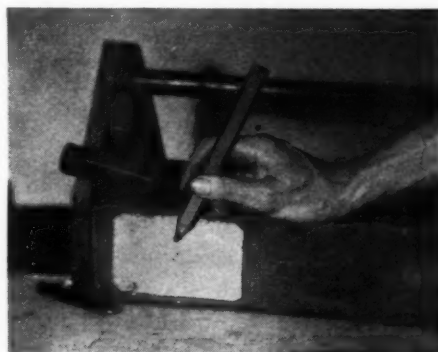
The first plycell structure—a 2-bedroom bungalow—was built at Belle Haven, an attractive residential section near Palo Alto, California. The contractor, Joseph Greenbach, reports that use of the plycell system permitted a considerable saving in erection time and construction costs.

Architect F. Frederic Amandes points out that the new building material gave him complete flexibility in floor plan and style, and greatly simplified the problem of detailing, by eliminating the necessity of planning and specifying framing details.

Keeping Carpenter's Pencil Sharp

A CARPENTER in the neighborhood found that he often neglected to include a piece of sandpaper in his tool tray when he went out on a job and as a result the edge of his marking pencil became dull and less accurate as his work progressed. He finally glued a good sized piece of fine sandpaper to the side of

his tote tray which assured him that his pencil could be shaped up at any time away from the shop.—W. C. WILHITE, Carlinville, Ill.



SHARPENING pencil on sandpaper glued to side of carpenter's tool tray.



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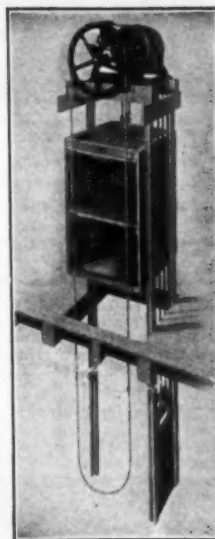
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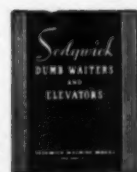
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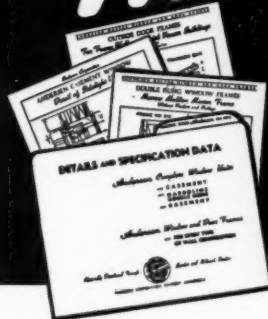
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LETTERS from Readers on All Subjects

Facts, Opinion and Advice Welcomed Here

American Builder Welcomes Widest Possible Distribution of its Helpful Information

Santa Fe, N. Mex.

To the Editor:

We have just finished reading your latest Building Outlook Letter.* To our mind, this is the best analysis of the present situation that we have had the privilege to read. It occurred to us that a free distribution of this letter to a number of the building material dealers and contractors in this area might lead to a helpful mental attitude on the part of a number of them who are at this time inclined to be very pessimistic over the building outlook. Would you wire us, at our expense, if you will grant us permission to reproduce 1,000 copies of this letter, giving you full credit for the letter. We believe it is necessary to do this immediately because of the many "scare" headlines which have appeared locally in the past few weeks. Naturally, if you would not desire that we reprint the letter, we would like to find out if we might purchase 1,000 copies from you.

J. K. S. WALTER,
Santa Fe Builders Supply Co.

*This contained advance summary of part of the important information on Priority Assistance for home builders as presented in this current November *American Builder*. We are glad to have readers circulate all such encouraging facts to build confidence.—EDITOR.

Finds Priority Articles Valuable

Grand Rapids, Mich.

To the Editor:

We should say a good word for the October issue. You boys truly scooped the field. The articles on the procedure of acquiring priorities in home building will prove this the most important issue of *American Builder* in many months. It is a real job from an editorial standpoint and will, undoubtedly, be read by every builder and contractor in the field; so keep up the good work.

W. W. PETERSON, Advertising Mgr.,
National Brass Co.

Trend Toward Shower Cabinets

Elkhart, Ind.

To the Editor:

Your October issue is about the most interesting in the series of 1941 interesting editions. The subjects are timely, varied, well illustrated and practical.

On various occasions I have been moved to offer some comment pertaining to your editorial recognition of the trend toward separate, individual showers. The October number offers a perfect setting for my comments. The great demand for modernization of old homes into rooming houses or apartments to accommodate defense workers is certainly emphasizing the fact that America is "going for" the cabinet shower—the type one can walk up and into almost as easily as stepping over the threshold of a door. These separate, individual showers are going into homes by the thousands all over the country—and into mass housing projects as well. It all points to the almost revolutionary trend which is taking place in the bathing habits of the American people. We predict that in the future *American Builder*, as well as other publications in the building field, will be publishing more and more of such plans as appear on pages 87 and 88 (under the article entitled "Bohannon's Hillsdale") which indicate the place which the separate, individual shower has in the modern home.

CARL L. BUCHANAN,
Henry Weis Mfg. Co., Inc.

Not Unpatriotic to Build

Washington, D.C.

To the Editor:

Congratulations on your Building Outlook Letter of October 11 (interpreting building priorities).

It is a crime the way the newspapers handled this matter, and also the way they handled the statement of John L. Haynes, of the Lumber and Building Materials Branch, Division of Civilian Supply.

This gives the trade papers and our industry a big job to do to build back the confidence of the building public to the point where they will not deem themselves unpatriotic if they even attempt to do a modernization job, much less build a house.

Our big problem now is to make people read bulletins telling the truth about this situation and keep them from giving up. The *American Builder* is certainly in a position to do a swell job in this respect, and I hope you will "pour it on thick."

H. R. NORTHUP, Secretary,
National Retail Lumber Dealers Assn.

Congrats. from Charles M. Hines

Chicago, Ill.

To the Editor:

I have read with absorbing interest your editorial and the various articles in your October number of the *American Builder*, dealing with priorities and allocation of critical materials in connection with the private construction industry.

I believe that the construction industry and the officials in charge of our defense program, and housing organizations, are deeply indebted to the *American Builder* for this comprehensive accumulation of facts concerning the private home building industry and its relationship to the defense program.

It is gratifying that so much information has been made available by the FHA on the relatively small amount of critical materials used in home building. I am confident that this splendid group of articles will substantially aid the government and the construction industry in co-ordinating their efforts to make home building contribute as much as possible to the defense program with a minimum use of critical materials.

Our sincere congratulations on this achievement.

CHARLES M. HINES, Senior Vice President,
Edward Hines Lumber Co.

Likes Wide Price-Range in Home Designs

Lexington, Ky.

To the Editor:

The copy of "Security Homes" and the first issue of *American Builder*, which you have just sent me, have been received; and I appreciate them very much. I like the variety of prices in homes and also the beauty of design and convenient arrangements. There are many building ideas that I am sure I am going to find very helpful from time to time.

I thank you very much for these publications and am looking forward each month to having the *American Builder*.

JAMES L. SHEA, Chief Inspector,
City of Lexington.

Wife Takes an Interest

Nutley, N. J.

To the Editor:

As you will note from this letterhead, these lines are from a builder. You're right! But only from his wife. I am very much interested in this building game; it comes third in my life, following my husband and children. In fact, it is for me, rather than my husband, to be on the lookout for different and economical ideas to put into his new homes.

I want to say now that I enjoy and read your publication, *American Builder*. Keep up your slogan, "A home owner is never a fifth columnist." Good luck to you in your battle to preserve the individual small builder. There are a great many of these small fellows that would support you, once they were reached and aroused.

MRS. JOSEPH M. NIEDZINSKI,
Wife of a Builder.

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By Joseph Weston

"Facts you should know before you build a garage" is a 20-page manual of garage sizes, locations, construction, doors, etc. It gives data on driveways, paving, etc. Dozens of sketches. Written by Joseph Weston, R.A., and edited by the leading home, building and architectural magazines.

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This garage handbook is published by the Fir Door Institute, makers of the Craw-Fir-Dor. This sturdy, fool-proof, overhead-type garage door can be installed by any builder in less than half a day. It's ideal for new and old garages. It sells for as little as \$31 in any U.S.A. jobbing center and is handled by all progressive lumber dealers. See the four smart designs—use one on your next job.

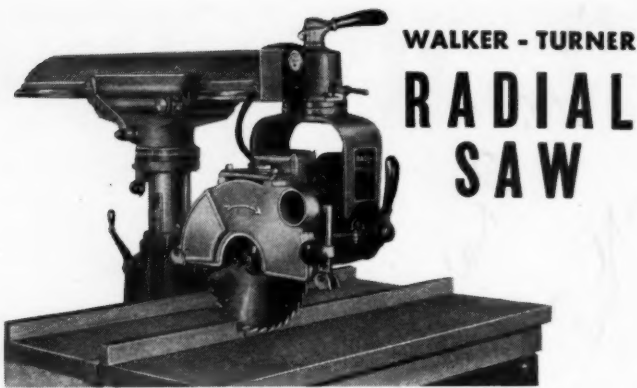
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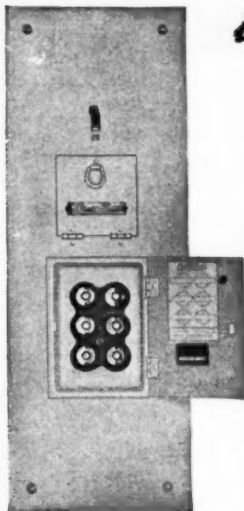
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Frank Adam
ELECTRIC COMPANY
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A City of Homes—

(Continued from page 53)

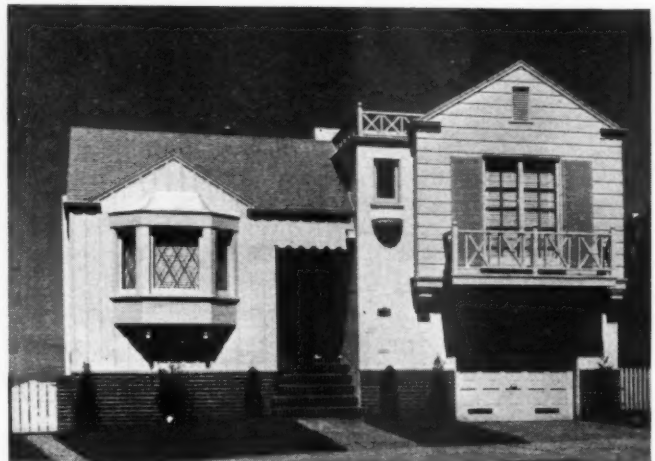
storage space or converted into a rumpus room if desired.

Exteriors of both detached and row houses are of stucco with redwood siding and trim; roofs are Certain-teed shingled. Row houses, to a great extent, are built according to stock or reverse plans with variations as to exterior treatment and interior details, as previously indicated.

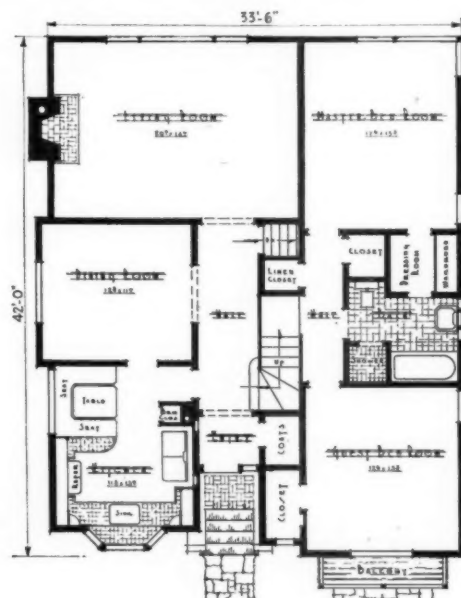
The reverse plan enables placement of living and dining quarters where there will be the benefit of a marine view and plenty of sunshine. This may be at the rear of the house or on the street side, with sleeping rooms on the yard or front, depending upon lot location and which side faces the ocean.

Besides what is known as the reverse floor plan, other Doelger-built features, in the newer homes especially, include a patio (tunnel) entrance, Pullman breakfast nook and daylight kitchen. The Pullman breakfast nook, sometimes referred to as the club car breakfast room, is an integral part of the kitchen. All homes built on the attached plan have a skylight in kitchen and bathroom so there are no dark corners anywhere.

"Home buyers today want better built houses with step-saving conveniences and fewer folderols," Doelger told *American Builder*, citing the Pullman kitchen as an example of convenience and step-saving economy. The patio entrance at the side of the basement garage in the newer homes, he says, eliminates a long hall and gives the various rooms that face the patio a daylight outlook which would not be possible with an enclosed entrance hall. Doelger is credited with having originated the Pullman kitchen planning idea in San Francisco home building. All seats in the



ONE of Doelger's detached corner houses in San Francisco.



breakfast alcove are upholstered in simulated leather. Some of the tables are chromium trimmed or have metal-painted bases.

Over a period of years Doelger-built homes have become basically standardized, as mentioned previously. Some of these standardized details are: Venetian blinds throughout; weather stripping and metal thresholds for entrance doors in the higher bracket homes; parquet pattern oak floors in living rooms, dining rooms and halls with plain oak in the bedrooms, and T. & G. flooring covered with a layer of building paper before the hardwood is laid; wood cornices or plaster molds for ceilings; and Sheetrock wallboard for all smaller row houses as well as some of the larger detached dwellings.

Standard Construction Details

Other features include linoleum in all kitchens and $\frac{1}{4}$ inch plywood between the sub-floor and the linoleum to prevent buckling and cracking. Before the kitchen floor covering is laid a prospective home buyer has the opportunity of selecting the linoleum color and also the shade of the upholstered cushions in the Pullman breakfast nook. Kitchen broom closets and ironingboard compartments are in one, separated by a partition. All houses have the combined basement garage and storage facilities with accommodations for the utilities of such standard make as Fraser gas furnaces and Mission Storage water heaters.

Doelger's operations are entirely speculative and operative. His building schedule does not allow for contract business, although at least 80 per cent of Doelger-built homes might be classified as built-to-order because they are sold far in advance of actual completion, and prospective home owners have the option of making their own selection in the way of color (tile and paint), roofing, electrical fixtures, wall outlets, linoleum and upholstered seats as mentioned. With such a wide latitude a speculative house almost becomes a built-to-order one. Personal selection of appointments, however, is permitted only if construction is not too far along. Choice of architectural style, to some extent, is also possible, again if construction progress permits and the style selected does not conflict with adjoining buildings. Wall outlets, too, are changed over from original specifications without charge if a prospect signifies a house choice before these incidentals are in.

A New Type of Building Investment

This builder has worked out an unusual idea in corner lot development, utilizing block corners for large, detached houses or a new type of building investment which he retains for his own purposes. Corner houses, because they occupy more floor space and have a wider range of landscaping possibilities, sell for more than the "row" houses and show a greater latitude, perhaps, in architectural treatment.

In the investment property, on the other hand, Doelger puts up three individual row or attached houses on a 100' x 32'6" lot and divides them up into rental units. Each single dwelling accommodates two tenants, having a four-room upper flat that rents for \$55 unfurnished, and a two-room lower apartment renting for \$32. A basement garage is located on the same level as the lower apartment which accounts for the disparity in room apportionment. Each of these "little bungalows" (as Doelger refers to them) is a separate house, although they are the attached row type joined into one roof line, or with three distinct roofs. Corner apartments rent readily and a building investment of this kind assures the builder an income from otherwise hard-to-sell corners.

The Doelger Organization

Doelger's building schedule calls for as many as 280 houses under construction at one time. Consequently there are no lay-over periods for sub-contractors, many of whom have been with the San Francisco builder since he started 15 years ago. Though maintaining his own carpenter crews and the ready-cut division as indicated, he sub-contracts all other work. At one time Doelger employed his own tile men and painting crew. However, labor conditions being what they are in San Francisco, this experienced builder has found his present policy of labor maintenance, to the extent mentioned, and outside hiring for all other construction work, decidedly advantageous in mass building.

A complete architectural planning and drafting division is part of Doelger's operative plan. A staff of six, headed by a
(Continued to page 108)

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or Recirculating Fireplace

?

WHAT does your client need in a fireplace?—for large home or small? winter cabin or summer home? northern or southern climate?

WHEN will your client use the fireplace?—as main heating unit (as in South)?—or to supplement the furnace and save its inconvenience for weeks each spring and fall?

WHERE will it be?—1st or 2nd floor, or cellar rumpus room?

HOW much should your client pay?

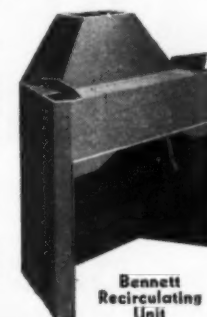
The answers to these questions will help you prescribe the correct fireplace for your client. Both the Fresh Air and Recirculating Fireplace Principles are good—but one is always better for a certain condition. BENNETT offers both, and—

The BENNETT GUARANTEE is YOUR Guarantee

All Bennett units are backed by a positive guarantee—your assurance of satisfied customers. Large warehouse stocks all over the country insure prompt delivery.



Bennett
Fresh Air Unit



Bennett
Recirculating
Unit

BENNETT
FIREPLACE COMPANY

Write for
FREE Catalog!

1141 MARKET ST., NORWICH, N. Y.

NON-TILTING PLASTER-MORTAR KWIK-MIX 6-P

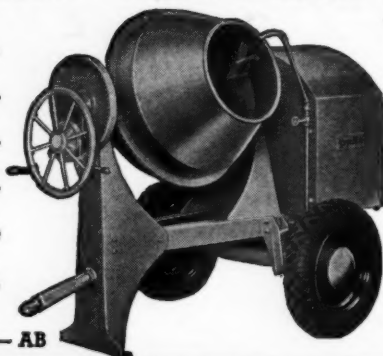


Fast discharge — 7 seconds — no tilting necessary — weighs only 850 pounds — air-cooled engine — V-belt and worm drive.

WRITE FOR BULLETIN NP — AB

3½-S TILTING KWIK-MIX

Side discharge — anti-friction bearings — welded construction — discharge either side — spring mounting.



WRITE FOR BULLETIN SD — AB

KWIK-MIX CONCRETE MIXER CO.
PORT WASHINGTON . . . WISCONSIN

Save
50% OR MORE
OF FINAL COSTS ON
WOOD FLOOR
FINISHING
With
LIGNOPHOL

LIGNOPHOL COSTS LESS THAN 1 CENT PER SQUARE FOOT
Applied in one application with a long handled brush—reducing labor to the minimum.

LIGNOPHOL BEAUTIFIES YOUR FLOORS!

LIGNOPHOL LEAVES NOTHING TO WEAR OFF!

Shellac and varnish, surface treatments, wear off!

Do as thousands of contractors are doing: Enjoy more profits, attain greater job satisfaction and save 50% or more by using LIGNOPHOL to preserve and finish your floors.

FIND OUT MORE ABOUT LIGNOPHOL

MAIL THIS COUPON TODAY!

Dept. B-11
L. SONNEBORN SONS, INC., 88 LEXINGTON AVENUE, N.Y.C.
Your Name _____
Address _____
City _____ State _____

A City of Homes—

(Continued from page 107)

competent architect, is housed in a modernly designed department where plans are studied and prepared on the basis of maximum sunshine coverage, and turned out in volume at minimum cost through the installation of a (B-W) printer for black and white reproduction. Thus architectural planning also becomes a feature of economy in the Henry Doelger organization. A view of the modern drafting room is shown on the first page of this story.

Adjoining the planning division is the construction engineering department headed by H. W. Bott, which is also by way of being a sample room for tile, roofing and other materials. Complete files of all specifications, plans, job and mill data are on hand here.

A service department of six men, including three painters, checks each house sold at the end of six months. At such time, adjustments are made wherever necessary, in cases of settling or shrinkage, paint retouching, minor repair work on lights, outlets, windows, etc. A year's service without charge is an understood guarantee that has come to be associated with all Doelger-built homes, although not specifically advertised.

Large Advertising Program

Approximately \$30,000 a year is spent in newspaper advertising and spot radio time daily.

Two model homes furnished by leading department and furniture stores are on display at all times. These are given attractive names and advertised under the banner of American fashions. Thus one of them is featured as the John Alden; others as the Fashion Master and Westchester. Each represents a specific style of contemporary architecture. In advertising the \$5560, five-room model John Alden, emphasis was on room placement, a down payment of \$960 and monthly payments of \$37.50. Down and monthly payments are invariably quoted.

Newspaper advertising, it is estimated, is responsible for 75% prospective home buyers, while the remaining 25% comes from satisfied home owners.

Another recommendation as to the sound quality of Doelger-built homes is in the record of 75 homes sold this year to Doelger workmen.

Aside from developing a vast building enterprise, Doelger's rise to first builder in San Francisco in point of volume is phenomenal. Starting from a one-room office in 1926 with but one employee, he now has a staff of 30, housed in the spacious modern structure illustrated, and a transportation fleet which includes two station wagons and 11 company-owned trucks.

Associated with Henry Doelger is his brother, John, construction superintendent.—S. A. Lewis.

* * *

Pierce Foundation Homes—

(Continued from page 51)

in tub with shower and is tile-trimmed, with linoleum on the walls and floor.

- The house is heated with a Coleman oil burning floor furnace set flush with the floor.
- The porch has a poured concrete floor and stepping stones lead to the common sidewalk.
- The walls are constructed of Celotex Cemesto, 1½" thick. This material, thickness for thickness, possesses the same insulation value as cork and guarantees that the house will be cool in summer, warm in winter, and economical to heat. Celotex Cemesto Board does not require painting either on the inside or outside surface. Thus, the upkeep is remarkably small.
- The ceiling is constructed of Celotex Key Joint Units, an insulating material 25/32" thick, with a pleasing ivory color.
- The roof is built with Celo-Roof structural units which possess high insulation value. Its heavy butt causes shadow lines. Celo-Roof consists of formed sheets of Celotex insulation, 7 feet long and 15 inches wide, encased in a 90 lb. asphalt roofing felt surfaced with mineral granules.

Builders Rush Small Defense Homes

(Continued from page 49)

tectural award for excellence of design and soundness of construction from the New York Chapter of the American Institute of Architects. Specifications and construction features of the original Nantucket models include the following products. Under the priority system many modifications will be required.

Eight inch poured concrete footing and foundation.

Exterior walls of firesafe, termite-proof, weather resisting Johns-Manville Cedargrain asbestos shingles. Double-coated Thick-Butt asphalt shingle roof laid over roofing felt on $\frac{7}{8}$ " roof sheathing.

Sixteen oz. copper leaders and flashing.

Interior walls 3 coats of plaster over firesafe U.S.G. Rocklath.

Steel corner beads and cornerites from floor to ceiling. All exterior and interior trim of white pine; 2 x 10 floor beams cross-bridged for stability; 3 x 8 beams in ceilings.

Floors of select $\frac{7}{8}$ " oak laid over $\frac{7}{8}$ " underflooring.

Tile in bathroom floor laid on 4" of concrete. Tile at a height of 5' 6" above bathtub.

Crane bathroom fixtures with chromium plated bathroom fittings.

Kitchen cabinets custom-built for attractive appearance, long wear and storage capacity.

Armstrong linoleum in kitchen.

Insulated table-top gas range.

Triple-duty System of warm water heating by Crane Co. (Heat and hot water.) Wet base oil burning boiler.

House anchored to foundation by steel anchors.

Electric door chimes.

Clothes dryer and window shades.

Decorative door authentically Colonial in design with wrought iron railings at front entrance.

Full attic with Marschke disappearing stairs.

Large garage with asbestos shingles laid over $\frac{7}{8}$ " pine shiplap.

Large plots, graded, top-soiled, seeded and landscaped.

* * *

"Keep Salesmen at Work"—Anderson

URGING that companies do not scuttle a major investment in salesmen for the sake of several years of defense business, R. E. Anderson, advertising director of National Gypsum Company, speaking at the weekly luncheon meeting of the New York Sales Executives' Club at the Hotel Roosevelt on September 30, stressed the necessity of maintaining sales forces intact and of bolstering the morale of salesmen against the time when normalcy returns and priorities are a thing of the past.

With sales potentials cut and salesmen's income and expense accounts slashed, the far-sighted sales executive will realize that he must convince his sales organization that in this seller's market the salesman's services are not temporary, Mr. Anderson said.

He pointed out that National Gypsum's investment in salesmen is a major one. "Our sales force has grown from 7 to 317 persons in 15 years, while our company has expanded from one gypsum mill with an industry volume of less than one per cent to a 21-plant operation with 30 per cent of the industry sales volume," he stated. "Since our organization in 1926, our sales force has been chosen to be permanent. Today we realize that equally as important as maintaining our investment in salesmen is the bolstering of the morale of that sales force."

To lift the morale of the salesmen and give them an incentive beyond that of mere "order-taker," National Gypsum last month instituted a ten-year merchandising and advertising program, despite the fact that the company is oversold for many months. Mr. Anderson stated that the company had received more than 200 congratulatory letters from members of its sales staff in recognition of this long-range program.

Let this Fireplace Help to Sell Your Low-Cost Homes

● The extra value of a Heatilator Fireplace in the living room convinces your prospect that the house has been carefully planned and that it is quality built throughout. More—the Heatilator Fireplace circulates

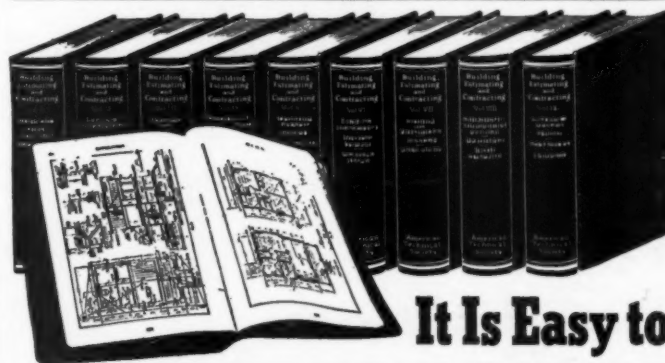
heat, cuts heating costs spring and fall. It is a valuable selling feature for the low-cost house.

● WRITE TODAY for full particulars.

HEATILATOR, INC.,
7111 E. Brighton Ave., Syracuse, N. Y.



HEATILATOR Fireplace



It Is Easy to Be a CONTRACTOR

Learn to estimate, to plan buildings, to take contracting jobs, and make money on them. Here are 9 up-to-the-minute books on building, estimating, and contracting which cover, in an interesting way, the subjects that carpenters, builders, and contractors should know to make the most out of their jobs. Roof Framing, The Steel Square, Architectural Drawing and Design, Estimating, Painting and Decorating, Heating, Air Conditioning, Building, Contracting, Concrete Forms, and other subjects are all well covered. A marvelous encyclopedia for general reference purposes in the building field.

Boss Carpenters in Demand

Vast public works jobs, immense projects, and the rapid growth of home building, are making jobs for MEN WHO KNOW HOW. These books give you quick training. With them you shouldn't be afraid to tackle any job, for needed facts can be found in a hurry.

Up-To-Date Edition

These books are the most up-to-date and the most complete books we have ever published for those interested in the Building Trades.

Coupon Brings Nine Books Free for Examination

American Technical Society, Publishers—Home Study Courses
Dept. G833, Drexel at 58th Street, Chicago, Illinois.

You may ship me the latest edition of your nine big books, "Building, Estimating, and Contracting" without any obligation to buy. I will pay the delivery charges only, and if fully satisfied in ten days, I will send you \$2.00, and after that only \$3.00 a month, until the price of only \$29.80 is paid. I am not obligated in any way unless I keep the books.

Name

Address

City State

Please attach a letter stating your age, occupation, employer's name and address, and that of at least one business man as a reference.

**NOW'S
the Time
when**

Speedmatic

**QUALITY
COUNTS!**

We're glad we've always made a quality product—always had continuous, full-capacity use in mind when designing a saw.

One that would not only make easy work out of the toughest job, but be able to repeat such performance over and over again.

For now, the saw you own has to be depended upon for more work for a longer time—and if it's SPEEDMATIC, you can be certain it won't let you down. That's because SPEEDMATIC construction is based on practical "know how" of power saw design. Helical gear drive cuts down friction and wear—transmits 11% more power. Oversize motor avoids stalling, overheating. Perfect balance and wide shoe give firm, strainless, one-hand support. See your local Porter-Cable representative today for SPEEDMATIC demonstration. No obligation. Write for FREE copy of "NEWEST SAWING METHODS."

**PORTER-CABLE MACHINE CO., 1721-11 No. Salina St.
Syracuse, N. Y.**

Representatives in Principal Cities in U.S.A.



ALL MOULDING AND TRIM are given a paint dip in the Mott factory before going out to the job.

A Factory for Tailored Homes

(Continued from page 71)

house building job, and virtually knows how many nails are required for the next day.

The Motts advertise consistently in the newspapers of New York and neighboring cities. They publish an elaborate booklet of representative architectural types with floor plans. They maintain central offices in the General Motors Building at Broadway and 57th Street in Manhattan, so that often as not, when a builder undertakes the creation of a new suburban community he does not start from scratch, but has a handful of contracts to build-to-order.

Practical experience has given Mott Brothers a sharp insight into the likes and preferences of every size of middle class family—the people who buy homes ranging from around \$7,000 to \$18,000 and more. It enables them to advise against freakishness, to anticipate future needs, to insure resale value. For example, if a maiden lady insists that all she needs is one bedroom, they are in a position to show her the mortgage advantages of having a second bedroom and space for more rooms and another bath upstairs in the event she ever wants to cash in on her investment.

But the most interesting of all is the actual working of this organization, and of course, this centers in the warehouse. Deliveries over the entire 50-mile radius of the New York suburban section are made from this warehouse. More than 15 truck-loads of building materials and supplies depart daily, while freight cars are shunted into the siding to replenish the stores. There are more than 700 feet of private railroad siding adjoining this warehouse and its extensive yard for storage, sorting and loading. While H. B. (Mott) presides over the sales offices, Brother E. C. makes all purchases and directs the supply end of the business.

The warehouse is a veritable laboratory of home building. As the lumber comes off the freight cars it is sawed to standard lengths, treated for weather protection, and stored as orderly as if it were on a grocer's shelf. Pipe fittings are piled high. Bathtubs, sinks, drums of paint, kegs of nails, rolls of building paper, bales of mineral wool—each forms its own mountain.

The mineral wool is an important item, for every house erected under Mott Brothers' service must have a full four inches of mineral wool in all outer walls and ceilings. The insistence on four inches in the walls is a matter of salesman-

STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCULATION, ETC., REQUIRED BY THE ACTS OF CONGRESS OF AUGUST 24, 1912, AND MARCH 3, 1933

Of American Builder and Building Age published monthly at Chicago, Ill., for Oct. 1, 1941.

State of Illinois } ss.
County of Cook }

Before me, a Notary Public, in and for the State and county aforesaid, personally appeared Bernard L. Johnson, who, having been duly sworn according to law, deposes and says that he is the Editor of the American Builder and Building Age and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management (and if a daily paper, the circulation), etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, as amended by the Act of March 3, 1933, embodied in section 537, Postal Laws and Regulations, printed on the reverse of this form, to wit:

1. That the names and addresses of the publisher, editor, managing editor, and business managers are: Publisher, Simmons-Boardman Publishing Corporation, 105 West Adams St. Chicago, Ill.; Editor, B. L. Johnson, 105 W. Adams St., Chicago, Ill.; Managing Editor, R. E. Sangster, 105 West Adams St., Chicago, Ill.; Business Manager, Robert H. Morris, 105 West Adams St., Chicago, Ill.

2. That the owners are: Simmons-Boardman Publishing Corporation, 30 Church Street, New York, N.Y.; Stockholders of 1 per cent or more of the total amount of stock are: I. R. Simmons, 15 Hillcrest Dr., Pelham Manor, N.Y.; P. A. Lee, Hopatcong, N.J.; Henry Lee, Hopatcong, N.J.; E. G. Wright, 398 N. Walnut Street, E. Orange, N.J.; S. O. Dunn, 105 West Adams Street, Chicago, Ill.; C. E. Dunn, 3500 Sheridan Blvd., Chicago, Ill.; L. B. Sherman, 575 Sheridan Road, Winnetka, Ill.; Mae E. Howson, 105 West Adams Street, Chicago, Ill.; B. L. Johnson, 6949 Bennett Avenue, Chicago, Ill.; Spencer Trask & Company, 25 Broad Street, New York, N.Y. General partners of Spencer Trask & Company are: Edwin M. Bulkley, Walnut Street, Englewood, N.J.; Acos a Nichols, Cold Spring Road, Oyster Bay, N.Y.; Cecil Barret, Carlyle Hotel, New York, N.Y.; C. Everett Bacon, 16 Erwin Park, Montclair, N.J.; F. Malbone Blodget, 65 Patterson Ave., Greenwich, Conn.; Arthur H. Gilbert, 440 Park Ave., New York, N.Y.; Henry S. Allen, 407 Highland Ave., Orange, N.J.; William Kurt Beckers, Ridgefield Rd., Wilton, Conn.; Edwin M. Bulkley, Jr., 220 Madison Ave., New York, N.Y.; J. T. Foster, 66 Patterson Ave., Greenwich, Conn.

3. That the known bondholders, mortgagees, and other security holders owning or holding 1 per cent or more of total amount of bonds, mortgages, or other securities are: None.

4. That the two paragraphs next above, giving the names of the owners, stockholders, and security holders, if any, contain not only the list of stockholders and security holders as they appear upon the books of the company but also, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting, is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner; and this affiant has no reason to believe that any other person, association, or corporation has any interest direct or indirect in the said stock, bonds, or other securities than as so stated by him.

BERNARD L. JOHNSON, Editor.

Sworn to and subscribed before me this 29th day of September, 1941.

(SEAL)

ANNE A. BOYD.

(My commission expires Dec. 10, 1943.)

Send for Catalogs
MONCRIEF
Furnaces and Winter Air Conditioners
COMPLETE LINE FOR Coal Gas Oil
THE HENRY FURNACE & DRY. CO., 3479 E. 49th ST., CLEVELAND, OHIO

ship, for these men feel that the difference in cost between two inches and four inches in the sidewalls is more than offset in the strong appeal that this snugness has to the public.

Every unit of construction that lends itself to prefabrication is finished in the warehouse. This includes the manufacture of all doors and windows, sashes being fitted into frames, and panes into sashes, so that every door and window in a house is delivered to the job complete in its frame, equipped with all hardware, sized to prevent the slightest warping, and ready to fit exactly into place in conformity with the plans.

"It is all a case of standardization without sacrificing any individuality," explains Harold Mott. "Every house, no matter what its architectural style may be, obviously needs rooms and walls and floors, windows and doors. The various essential units of a house can be fitted together in combinations that are as infinite in variety as the countless arrangements that appear on a chessboard with the same number of chessmen."

So, Mott Brothers take a standard size window that would be planned for any bedroom, for instance, finish it in the warehouse, fit it complete into its supporting studs and send the entire unit to the job where it takes its place directly in the framing.

Entire stairways are built in this warehouse and sent out with treads finished, railings ready, and fitting as neatly as new tires fit a motor car. Kitchen drainboards and counter surfaces are covered with linoleum and bound with metal moulding ready for the sink and other kitchen equipment specified. Fireplace mantels are fabricated in a variety of period styles. Cupboards and shelves, bookcases and wall paneling, all are turned out finished in the warehouse.

The economies in labor on the job, achieved through this system, are tremendous. The workers are enthusiastic about it. A glazer, for example, stands at his post with a steady flow of frames handed to him from one side and a continuous stream of finished windows passing out in the other direction. There is no wandering from one construction job to another for these warehouse craftsmen, and naturally they become expert in their respective fields, recapturing that old-time pride of good workmanship.

One of the most fascinating functions to watch in this plant is the creation of a stately and impressive front doorway. Perhaps the design calls for fluted columns at the side and a more or less ornate pediment. These are tooled and assembled. If a fanlight and sidelights are specified they are milled and glazed. The heavy entrance door is paneled and planed, sized and hung, fitted with its lock and knocker. Each detail is vigilantly inspected. And the finished assembly is sent "on location" complete, even to copper flashing around its edges.

The teamwork of this organization resembles the efficient working of an army in the field. Constant inspections and checks and rechecks enable the office to know that each home buyer is getting the house he contracted for. And the builder, because of the thoroughness of the Mott specifications, is able to give the buyer the following written guarantee:

"Neither the certificate of occupancy nor final payment shall relieve the builder of responsibility for faulty materials or workmanship and he shall remedy any defects due thereto which shall appear within a period of one year from the date of substantial completion."



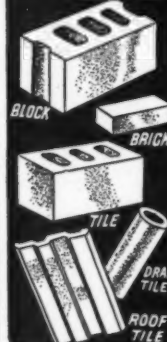
Every home needs the benefits of fresh air ventilation that Victor In-Bilt ventilators bring. For the thousands of low-cost homes being built for defense, Builders and Building Supply Dealers will find that an In-Bilt is a popular-priced ventilator of real air moving efficiency and beauty. Display and sell Victor In-Bilt ventilators for PROFIT.

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Write for details. Dept. IB-221, Victor Electric Products, Inc., 2950 Robertson Rd., Cincinnati, O.

VICTOR IN-BILT VENTILATORS

Making these PRODUCTS is BIG BUSINESS TODAY



Get into the manufacturing of the "Big Five" concrete products: Block, Tile, Brick, Roof Tile and Drain Tile. Minimum equipment investment enables you to produce these units at bed-rock costs and get the maximum profit from the job.

SUCCESS equipment is designed for low production cost, easy operation, simple maintenance and long life. Time proven and guaranteed.

Investigate the SUCCESS line—either to tie in with your contracting business, or as an independent products manufacturer. Write at once for copy of new SUCCESS catalog, which gives low factory-to-you prices and liberal terms. Send today.

Concrete Equipment Co.
514 Ottawa Ave. Holland, Mich.



4 Coats of Paint

BAKED ON FABRIC



DOUBLE • PURPOSE WALL DECORATION appeals instantly to Home-buyers who recognize the all-important feature of low upkeep cost over a long period of years.

Long-wearing, durable, abuse-resistant SANITAS is a real selling point where active, growing children are concerned. Mild soap and water keeps SANITAS spotless. Its Fabric base is a permanent structural reinforcement.

Just a few cents more per month for the term of the mortgage pays for all the extra advantages of nationally-known SANITAS... the permanently washable fabric wall covering that PROTECTS WHILE IT DECORATES.

feature

DOUBLE • PURPOSE WALL DECORATION
for plaster or dry wall house jobs in all price ranges.

DOES A WALLPAPER JOB
without using wallpaper!
DOES A PAINT JOB
without using Paint!

★

SANITAS X-RAY

See how 5 successive processing steps: (1) start with a strong cotton fabric base; (2) impregnate it; (3) coat it to render it stain-proof; (4) strengthen it... and (5) finally give it the decorative character that makes every one agree "SANITAS is winning a new name for BEAUTY."



Sanitas FABRIC WALL COVERING

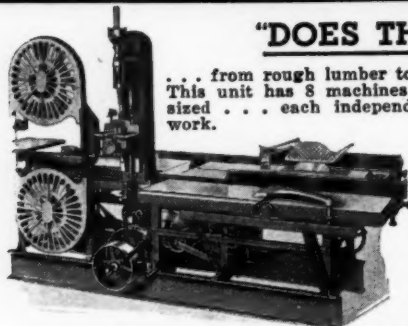
STANDARD COATED PRODUCTS CORP.
40 Worth Street, New York, N. Y.

Send the SANITAS X-RAY, free samples, and information to:—

Attention of _____
NAME _____
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CITY _____ STATE _____



AB-11

"DOES THE JOB"

... from rough lumber to finest trim and finish. This unit has 8 machines in one... each full-sized... each independently operated. Speeds work.

NEW MODEL "A" PLANING MILL SPECIAL

22" band saw, 12" jointer, tenoner, hollow chisel, mortiser and borer, rip and crosscut saw, cut-off saw and reversible spindle shaper and sand disc. Send for catalog.

Complete line of individual and combination machines
Good Woodworking Machines Since 1887

THE PARKS WOODWORKING MACHINE CO.
Dept. BL-11 1524 Knowlton St., Cincinnati, Ohio



Fig. 123

When Nails Won't Hold Use PAINE TOGGLE BOLTS

IN LATH AND PLASTER, HOLLOW TILE, SHEET ROCK, INSULATION BOARD, MACHALITE, GYPSUM, ETC.

The quickest, safest way to fasten fixtures, brackets and carpentry work to these hollow materials. The time saving alone will more than pay for PAINE Toggle Bolts. Your Hardware Dealer is waiting to supply you. You'll find PAINE Toggle Bolts in 9 different head styles in standard diameters from 6/32 to 1/2" in standard lengths.

THE PAINE CO. 2959 CARROLL AVENUE CHICAGO, ILLINOIS
New York Warehouse & Sales: 48 Warren Street

**Eye-Appeal Pays Profits**

Giving newer beauty to masonry buildings—new or old—is a business opportunity in every territory for one alert, ambitious man. Owners are wide open to accept Colorcrete—the liquid plastic—and at prices that can earn handsome incomes for authorized Colorcrete applicators. At reported costs as low as 2c per square foot, and selling prices up to 7c, the profit angle is evident.

BEAUTY COMES OUT OF A NOZZLE

Colorcrete is applied by air pressure, and actually fuses with all masonry surfaces. Color and waterproofing are combined. Colorcrete gives both beauty and protection. Choice of 30 colors and many textures. Write for book "Proven Business Opportunity" and lay first claim to your territory.

COLORCRETE INDUSTRIES, INC.
500 Ottawa Ave., Holland, Mich.

Write for FREE BOOK

QUICK CHANGE from Level to Transit

Two motions shift it from level to transit. One-piece standard casting gives great rigidity and strength. Built especially for contractors.

Try the Universal Avoid Costly Errors

\$10 brings you the "Universal" Level-Transit. One hour teaches you how to accurately check up surveys, avoid costly errors. Money-back guarantee.

Easy Payments. Use instrument. If not satisfied, return and your money is refunded. Or keep on easy monthly payments. Particulars on request.

Ask for FREE booklet
"How to lay out building lots"
DAVID WHITE CO.
311 W. Court Street,
Milwaukee, Wis.

We Do
Expert
Repairing

Tapes
Rods
Supplies

Try it
FREE



Only
\$10
Down

"Blackout" Bomber Plants—

(Continued from page 69)

Manhattan-Long Construction Company, general contractors for the Tulsa plant which will be operated by Douglas Aircraft Company, is using nearly a million dollars' worth of construction equipment, ranging from huge graders, trucks, cement mixers, hoists and erecting cranes to wheelbarrows and small hand tools on the work at Tulsa. There is about the same amount on the ground at Fort Worth.

The 27,000 tons of structural steel required for each plant was more than any single steel mill or fabricating shop could deliver in the limited time allowed. The Bethlehem Steel Corporation has been able to meet the required schedule on steel for Fort Worth, however, by distributing this work among seven of its plants at different locations. Several companies have cooperated in production of the steel for Tulsa, which is being fabricated under a contract with the Midland Structural Steel Company of Chicago, in seventeen shops throughout the Mississippi Valley and the Southwest.

Because all of the 171 200-foot trusses required for the main aisle of each plant are 25 feet deep and an equal number of 120-foot trusses for the side aisle, 16 feet deep—all too high for shipment of any completed segments by rail—they are being assembled entirely on the site. While most of these spans weigh 40 tons and 25 tons and can be assembled on the ground and raised into place in one piece, 115-ton jack trusses of 200-foot span are being assembled in place with the aid of heavy falsework.

Only one 200-foot hangar door opening has been provided in each plant, that being at the end of the assembly line. These doors, and eight 200-foot doors in the nearby Hangar Building, will be of the Truscon vertical lift type, installed in units 100 feet wide to operate independently of each other. Four 150-foot single unit doors of the same type will be used in the paint shop. All will be 40 feet high and insulated in a manner comparable with the requirements of air-conditioned buildings.

Truscon has been fabricating the doors, the steel panels, expanded metal lath, clips and other erection fittings at its plant in Youngstown. The fiberglass products are being produced at the Owens-Corning plants in Newark, Ohio.

The assembly buildings and a majority of the auxiliary structures at each plant have an over-all height of 65 feet. A 13-inch curtain wall of face brick and acoustic block, which is being specially reinforced with trussed rods to make it shatter-proof, rises to a height of 12 feet around the base of all buildings. The special insulated metal wall extends from that point to the roof. Fiberglass insulation board continues right down to the base of all walls through the masonry in order to insure absolute control of condensation. Even the bolts used to anchor the upper walls to steel girts are being insulated to prevent any continuous steel contact between exterior and interior.

The roof and wall construction will be uniform in all buildings at each site, including a two-story office building, a maintenance shop and boiler house, all of which adjoin the 4000-foot long assembly building, and a paint shop, hangar and cafeteria buildings, which are separate structures.

By blanketing the interior walls of each structure with white fiberglass, the engineers have not only provided for insulation and absorption of between 60 and 75 per cent of all factory and office noises, but have also obtained a light-reflecting surface which will maintain brightness at a high level. Each assembly building will have 17,000 two-tube 200-watt rectified (RF) fluorescent units recently developed by General Electric Company for high bays, to provide at least 35 foot candles at the working plane in continuous service. A white cement floor will enhance the general lighting efficiency by reflecting light up on the underside of parts and planes on the assembly lines.

**SASGEN DERRICK COMPANY**

3101 WEST GRAND AVENUE

Complete Line
of
Derricks
and
Winches

CHICAGO, ILLINOIS

Each plant has been designed with two mezzanine levels alongside the assembly line, for storage of various parts and sub-assemblies convenient to the particular assembly station where they will be installed. These mezzanines are suspended from the 120-foot trusses spanning a secondary aisle beside the 200-foot assembly section, and are supported on one side by the center columns.

It was necessary to provide some passage for monorails from aisle to aisle at intervals along the assembly line, and this need has been met by limiting the length of mezzanines to 450 feet so that there are seven 50-foot transfer aisles available for monorail crane connections. This has resulted in the creation of eight separate mezzanines at each level, 30 feet by 450 feet, and these are served by eight rotary lift hydraulic elevators large enough to handle all but the heaviest parts and bulkiest sub-assemblies, as they are received by truck or rail from automotive factories, engine manufacturers or other plants participating in the bomber-building program.

With food wagons and first aid stations, tool cribs, wash-rooms and toilets all located directly below the mezzanines or on them, nothing will obstruct the free operation of the interconnecting monorail systems which will serve the entire area of each assembly building. They will be capable of carrying a fully assembled 4-engine bomber the entire length of the 4000-foot assembly aisle where 40-foot clearance has been maintained, or transferring other overhead loads up to 20 tons between any two points in the 1,294,000-square-foot building area.

Bombers will progress through the final stages of assembly on parallel conveyors extending nearly 2000 feet through the assembly aisles, every portion of which will be served by a network of power lines in some ten miles of underfloor service duct.

Each plant will have a connected power load of over 15,000 KVA and an average demand of 10,000 KVA, of which 3000 KVA will represent lighting for the general assembly building. Power will be distributed through ten unit transformer substations of 600 KVA capacity on platforms in the trusses at each plant, and these will reduce 4160 volt primary to 440 volt secondary for distribution through a three-phase, 4-wire system. A 625 KVA steam turbine generator will meet emergency light and power requirements at each location.

Each plant will have three combination gas and oil fired boilers furnishing a total of 300,000 pounds of steam per hour at 225 pound pressure; three air-compressors each with a capacity of 1500 cubic feet per minute; and three fire pumps capable of delivering a total of 4500 gallons per minute to the plant sprinkler systems and fire stations on various parts of the site.

More than three-quarters of a million cubic yards of earth had to be moved in grading at each plant, where more than 150,000 cubic yards of concrete and 4000 tons of reinforcing steel will be required. There will be 1,490,000 square feet of concrete floors in each assembly building, more than 150,000 square feet in the aprons and another 175,000 square feet of concrete paving in the roadways at each site.

Four and a half million face and common brick are being used in the curtain walls around the base of each plant, and it will take 50,000 gallons of grey paint to cover structural steel, exterior walls, doors and other painted surfaces with a single coat. Over and above the 27,000 tons of structural steel there will be approximately 4460 tons of sheet steel in the sidewalls and roof, 1000 tons in the doors, and about 750,000 square feet of exposed steel in the sidewalls at each plant.

The fiberglass products, including mats, board and wool, for roofs alone, will total more than 5,000,000 square feet at each location, and an additional 2,300,000 square feet of these same products will be used in the sidewalls. The combined weight of these glass materials averages only one pound per square foot of wall and roof surface.



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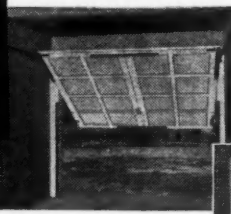
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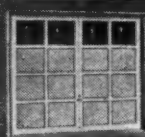
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